













"THE AEROPLANE," 1911.

# THE AEROPLANE

1<sup>st</sup>  
WEEKLY

CHAS. G. GREY, ("Aero-Amateur")

Vol. I.]

WEDNESDAY, JUNE 8th, 1911.

No. 1.

## The Arrival.



Mr. Claude Graham



SMITHSONIAN LIBRARY  
OCT 28 1959  
NATIONAL AIR MUSEUM

White diving into the Hendon Aerodrom during the recent "demonstration."

SMITHSONIAN INSTITUTION OCT •

# GREEN'S

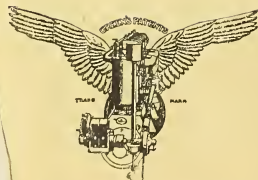
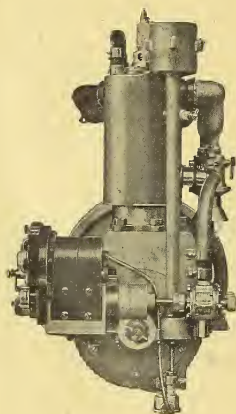
## ALL BRITISH AERO ENGINES

SODSOLD

Famous for  
Reliability, Power, and

Economy.

The Engine —



—And it has done.

The following  
Green's Aero  
There are  
the Green  
it's **ALL**

is were made with  
s. Achievements talk.  
res that for **results**  
unapproachable; and  
**H** too:—

All-British

Distance

All-British

Endurance

All-British

Carrying Record

British Motor

1909

British Motor

1910

Longest Flight

Made in Great Britain

World's Record

1-foot Boats

The only

to complete the 24

hours' run

"Patrick Alexander"

Compet

### The Green Engine Co.

Sole Licencees and

Green's Motor Patents Syndicate, Ltd.,

55, BERNER

STREET, LONDON. W.

M

ers for the Patentees:

The

er. Engineering Co., Ltd.

Telephone—8165 G

rd. Telegrams—"Airengine, London."

## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS ... ..	3 & 4	THE WEEK'S WORK ... ..	16
SOPWITH IN AMERICA ... ..	7	"PLAIN" TALES ... ..	18
AIR CURRENTS ... ..	8	LATHAM AT BROOKLANDS ... ..	19
THE SAFETY OF THE VOL PIQUE ... ..	11	THE ANTOINETTE MONOPLANE ... ..	20
OUR AVIATORS		MISCELLANEOUS NOTES ... ..	22
I. CLAUDE GRAHAME-WHITE ... ..	14		

## Editorial Opinions.

Why.

To use a well-worn phrase, *The Aeroplane* has been started "to fill a long-felt want," but this time the phrase has rather more than usual significance. There really is room to-day for a thoroughly independent weekly paper dealing with aviation in all its phases, a paper which is unconnected with any club or society, and so can give vent freely to criticism of the doings of anybody and everybody, and a paper the proprietors and conductors of which are devoted solely to the interests of aviation, and are, therefore, untrammelled by the influence of other sports or trades.

It will be the object of those responsible for *The Aeroplane* to make it appeal to all sorts of people who are interested in aviation. The man who builds machines will find in it technical and practical information which he will certainly not get elsewhere. The man who flies, or who is going to fly, will get useful hints from those who can fly well, for many of our leading aviators have promised to place their experience at the disposal of *The Aeroplane*.

Those who are chiefly interested in the doings of the aviators themselves will find full and graphic descriptions of the performances of each week, for *The Aeroplane* is situated where aviators most do congregate, and will always have first-hand accounts of every noteworthy flight.

The pure scientist will not be neglected, for several of the leading scientific students of aviation have arranged to lend their assistance to the paper.

Juvenile adherents to the sport will be encouraged in every possible way, for it is well to remember that the youngster in his teens, who experiments with models to-day, may, and in many cases will, possess an aeroplane of his own in a very short time. Even now he is a regular attendant at the flying-grounds, and is a person to be considered seriously on account of the effect his enthusiasm for the sport has in creating interest among his grown-up relations.

There are those who are foolish enough to scoff at "the schoolboy with his cap on the back of his head," but that same schoolboy spreads the interest in aviation among his elders simply because of his own keenness; and, apart from that, if one does not

encourage the younger generation, how is one to expect that generation, when it grows up, to take an intelligent interest in the problems of aerial defence?

## Aerial Defence.

Mention of aerial defence leads naturally to naval and military aviation. To this subject close, and possibly unwelcome, attention will be paid, for there is no phase of aviation which is of such importance to every man, woman, and child in this country as that concerned with our national defence. Already vast sums of money have been foolishly squandered on worthless dirigibles and death-trap aeroplanes. Even to-day this country does not possess a single aerial vessel, either heavier or lighter than air, which is capable of competing with the best of the machines owned by France, Russia, and Germany. Attempts have been, and will be again, made to plant obsolete and dangerous machines on the British Government, and it will be the particular task of *The Aeroplane* to expose the weaknesses of such machines and the folly of buying them. In doing so *The Aeroplane* will doubtless make enemies, and possibly lose an advertiser or two, but a whole-hearted enemy is often a valuable asset, and surely the saving of the taxpayers' money and of the lives of officer-aviators should be worth the loss of some advertisements.

Allied to this question of aerial defence is the question of British aeroplane manufacturers. Be it admitted at once that *The Aeroplane* starts with a prejudice in favour of British-made goods, other things being equal; and it is the bounden duty of every British writer on aviation to do everything he can to assist and encourage British constructors, for on the welfare of our home manufacturers our aerial defence depends.

To-day we could, no doubt, purchase as many aeroplanes as we want for military purposes from the French manufacturers, but in case of war with any Continental nation France would certainly be involved in one way or other, either as our ally or as an enemy. In the first case she would need every aeroplane she could make for her own army, and in the second case we should be "up against" the strongest air fleet in the world.



It is evident, therefore, that we must depend on home products for our home armaments, and it must be fairly obvious, even to an army intelligence officer, that if our home manufacturers are not encouraged to build aeroplanes for the Government to-day they will not be in a position to build them to-morrow. Imagine where our shipyards would be if we bought our warships abroad in time of peace. Would such firms as Vickers, Palmer, Armstrong-Whitworth, Yarrow, the Thames Ironworks, Thornycroft, and others be in their present magnificent positions, ready to furnish us with unlimited munitions of war, and able to keep hundreds of thousands of British workmen and their dependents in livelihood, if we had started in the early days by getting our warships built abroad?

But, be it understood, British manufacturers are only worthy of support so long as they build machines at least as good as those built abroad. At present, given equally powerful and reliable engines, our constructors are turning out machines which are in many respects better than any of the same type built on the Continent. In almost all cases our material and workmanship are superior to that of the foreign constructors, and in several cases our efficiency in speed and weight-lifting capacity is greater than that of foreign machines of equal power and similar type.

Just at present, however, there are machines being produced abroad which are of new types, and very much more efficient than any we have yet seen in this country. The French constructors have been able to evolve these new types thanks to the money they have made out of Government contracts, or owing to the readiness of French capitalists to finance experiments. In this country the constructors have no Government support, and it is extremely hard to find capital even for a sound business proposition which can show a year or more of work at a good profit.

**Another Phase.** The paper has been called *The Aeroplane* because the aeroplane is evidently the aerial vehicle of the future, but that does not necessarily mean that dirigible balloons will be neglected. On the contrary, considerable attention will be paid to them, as they are, as a rule, such excellent and forcible examples of how not to do things. Still, apart from that, it is quite possible that, for purely defensive work, dirigibles, if of the right type, may be very useful for military purposes, and as a pleasure vehicle, in which people who still do not believe in aeroplanes may experience a little of the pleasure of flying, and in which even aviators on holidays may spend a lazy day, the dirigible, if used with extreme care and only in specially suitable weather, may have quite a respectable future. That French dirigible which becomes in the summer the *Ville de Lucerne* and in winter the *Ville de Pau* has taken innumerable tourists for short trips during the past summer and two winters, and so has done really good work in educating people to the more serious work of aviation, and she has never had an accident, for she is handled on the ground by crews

who understand their work, and so is saved from the fate of dirigibles in this country. Also she is never taken out except in almost calm weather. *The Aeroplane*, in dealing with dirigibles, will always have the excuse that to make a gas-bag dirigible it has to be fitted with aeroplanes, as rudders and elevators.

**The Lighter Side.** Some people, with whom one must sympathise heartily, have no sense of humour, and one can only advise such people not to attempt to take a practical part in aviation, for without a sense of humour no one could stand the delays and disappointments which are the fate of the pioneers of the sport. Fortunately, however, aviation has its lighter side, and this side will be well handled in *The Aeroplane*. Everyone who is in the habit of frequenting our flying grounds knows how extremely humorous many of the happenings are, from the humour of a smash, which might have been a serious accident but is not, to the humour of the wonderful machine which would beat everything in existence except for its one fault, the fact that it refuses to fly. There are a few examples of the humours of aviation elsewhere in this issue, and it is to be hoped that they appeal to the majority of the readers of *The Aeroplane*, for certainly the men who do the actual flying insist on being amused. So far as this side of the sport is concerned, it will be the endeavour of those responsible for this paper to amuse without giving offence, though there may be instances in which certain individuals, whose pet ideas are the subject of a joke, may object to those ideas being held up to ridicule. Should anyone at any time conceive that they have a grievance of this kind they may rest assured that the Correspondence Columns of *The Aeroplane* will always be open to them, so that they may, to put it colloquially, "get their own back."

**The Reader's Help** All readers of *The Aeroplane* are cordially invited to lend their aid in making it the best possible paper for the sport and science of aviation.

Criticism is asked for, either destructive or constructive. No matter how hard the criticism may be it will not be resented, for a long course of flying-ground invective has made the editorial epidermis fairly resistant. Suggestions for improvements will receive every consideration, and will be acted upon whenever possible. Readers are also asked to send along photographs, sketches, or drawings of new machines, new engines, or new fittings which they themselves think of interest. Also accounts of flights and information about the building and testing of machines all over the country are particularly desired. The doings of clubs, amusing anecdotes and incidents, ideas for improving machines, theories as to the flying of machines, remedies for defects in machines and engines—all these and many others are matters on which information is desired, and by which the readers of the paper can help not only *The Aeroplane*, but all those who are spending their time and money in helping aviation to assume the position which by right belongs to it as the sport and science of the very near future.



THE . . .  
**SANDERS**  
**Aeroplane Co.**

---

THE SANDERS  
**Aerial Cruiser**

Fitted with  
SANDERS PATENT AERIAL GUN  
For Naval and Military Purposes.

Designed for **Rough Weather**  
**Rough Usage**  
**Rough Landing**

---

Machines built to rise from or alight on water.  
**Works & Flying Ground - BECCLES, SUFFOLK.**

*The*  
**UNIVERSAL**  
**AVIATION CO., LTD.**  
166, PICCADILLY, W.

**Aeroplanes.**

Can supply Aeroplanes of all types at short notice, and will construct to order machines of any kind.

*Standard Types—The*

“BIRDLING” MONOPLANE,  
“BIRDLING” BIPLANE.

**Tuition.**

Are prepared to undertake, on very reasonable terms, tuition in flying till certificate is obtained.

**Exhibition Flights.**

Have a staff of pilots prepared to undertake exhibition flights (Biplane or Monoplane) in any part of the country.

[Four Pilots were flying for the U.A.C., Ltd., on Whit-Monday, at Pwllheli, Warwick, Stafford, and Brooklands.]

**Tools,**

**Accessories, &c.**

Supply the wonderful “UNIVERSAL” “8 in 1” Combination Tool, and are agents for the “ATLAS” tyre jacket, MELHUISE’S tools, and other first-class necessities for aviators and motorists.

## Sopwith in America.

### HIS PASSENGER'S ACCOUNT OF HIS SMASH.

Mr. T. O. M. Sopwith, it will be remembered, took to America with him, in addition to his Howard-Wright biplane, a new Blériot monoplane of the latest tandem two-seated type, fitted with a 70-h.p. Gnome engine.

Early in May Mr. Sopwith had the bad luck to smash the machine up in an accident, but no particulars of how it happened reached this country till, just as the first issue of *THE AEROPLANE* was being prepared, the editor received a letter from Mr. Philip Wakeman Wilcox, the passenger who was with Mr. Sopwith at the time. Mr. Wilcox, who is "field manager" for the Moisant School of Aviation at Garden City, Long Island, wrote on May 10th, the very day of the smash:—

"It might be of interest to you to learn some of the details of a smash that Mr. Tom Sopwith had to-day on the Mineola aviation field. I was a passenger with him at the time of the smash, and the sensation was anything but pleasant.

"About five in the morning Mr. Sopwith appeared on the field and began to tune up his motor. However, the chief pilot of our school persuaded him to take a trial trip on the school machine. About seven-thirty the same morning, his machine being in readiness, he brought it out, and although a good wind was blowing headed it into the wind, and up she went about the quickest that I ever saw.

"He made a flight of one lap of the field, being up one minute and one second, as I got him on my stop-watch, and then took up one of our pupils as a passenger for a flight of two minutes and seven seconds. He again took a passenger and came down, and I asked him if he would care to take me up, which he consented to do.

"I climbed into the machine and the motor refused to work, so that someone yelled that I had 'hoodooed' the machine; but it soon started up, and before I could say 'good-bye' we were up in the air. There was a good wind blowing by that time, and I could feel the machine rise at every puff, and it seemed to me that it was inclined to be pretty unsteady, but as I had every confidence in the pilot it did not worry me much.

"As we were making the last turn I thought to myself that he was banking pretty hard over, when suddenly the machine seemed almost to turn over on its side, and made a plunge towards the earth, and then I gave up all hope of ever getting down alive. When we were about ten feet from the ground

Mr. Sopwith righted her up again, but was unable to get her nose up, and we struck the ground with a terrific smash.

"We were about 150 feet up when we started to dive, and if we had been about ten feet more I think the wreck could have been prevented.

"I want to say right here that I consider Mr. Sopwith's feat one of the finest things that I ever saw. He never for an instant lost his head, and got us out of a hole that I did not think was possible for any human being to accomplish. I speak from experience, because I had a similar accident last summer with a biplane, in which I completely smashed the machine, and narrowly escaped with my life.

"The machine was badly smashed, the engine being in pretty bad shape, propeller broken, and about everything except the tail being a complete wreck. He is sending it back to France to get it repaired."

From Philadelphia, posted on May 22nd, comes a postcard from Sopwith himself, saying: "I flew from the Aviation Ground across the city and round the City Hall, on the 'Family Tank.' Going splendidly, but it is a 'bit off' when one has to dodge buildings 600 feet up in the air!" We are indebted to Mr. Howard Wright for the autographed picture of Sopwith's start.

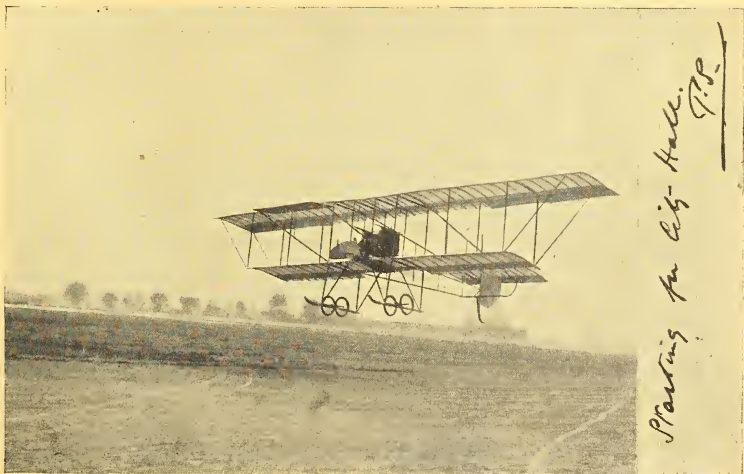
### The Silent Aeroplane.

On May 29th Lord Northcliffe made a cross-country flight from Buc with Mr. Maurice Farman on a new military biplane. This new machine has been equipped with a wireless telegraph plant and the Renault motor has been fitted with silencers, the idea being to give as little warning as possible of its approach.

Presumably, the daily papers will credit this idea of the silent aeroplane to France, but, as a matter of fact, Captain Hinds-Howell had a Howard Wright monoplane at Brooklands last year with an E.N.V. engine, which was fitted with large expansion chambers and long exhaust pipes, with the result that at a distance of 300 yards, or approximately 1,000 feet, the machine was absolutely inaudible.

There is no doubt that for military purposes a decently silenced engine would be an immense advantage, for the scream of a Gnome can be heard for fully two miles.

Mr. T. O. M.  
Sopwith on his  
Howard-  
Wright Biplane  
flying at  
Philadelphia.





## Air Currents.

Overheard at the Hendon "Demonstration."—First on-looker:—"What are all these politician chaps doing here?" This is an exhibition of aeroplanes, not gas-bags, isn't it?" His friend:—"Oh, they're here to supply the hot air for the *remous* and gusts."

The knowledgeable damsel had been hearing about the "screen" erected to protect the nose of the naval gas-bag at Barrow, and she had conjured up visions of the folding arrangements indigenous to drawing-rooms; so, being of a critical turn of mind, she said to the naval officer: "But won't it be very tiresome having to carry it about and unfold it, and put it up in front of the thing's nose every time it wants to come down and get its breath?"

The great aviator had arrived at the provincial town by air, and his biplane was being "camped out" for the night. The local enthusiast watched the process with interest till the assistants began to put tarpaulins over the Gnome engine. Then said the enthusiast: "I don't think much of this machine if they have to cover up the centre of gravity every night."

The family owned a parrot—and a grouse moor. In due season the family migrated to the grouse moor, accompanied by the parrot. There, shortly afterwards, the parrot disappeared, and, after a search worthy of Sherlock Holmes, it was given up for lost. Some three or four days after the disappearance of the parrot the family and their house party had a number-one-size grouse drive. In the thick of the drive one of the guns, sitting in his butt, saw a bunch of grouse get up to windward and come down wind straight at him, sixty miles an hour, as only driven grouse can, packed together, jostling one another in the air. So he up with his gun to let drive both barrels into the brown of them. Just as they got nicely within range, and, within hearing, he heard a voice up above shrieking: "Don't push, hang it! Don't push!" Moral: In view of the fact that the parrot is a very slow-flying bird and the grouse is very fast, the British War Office may learn from this little anecdote the folly of buying slow aeroplanes for scouting purposes and expecting them to operate in company with, or in opposition to, the high-speed machines of the Continental nations.

Brooklands has three constant *remous* or eddies, two downward and one upward; they are well known to all who fly there, and familiarity apparently breeds contempt. At any rate, a visitor asking an aviator there whether they bothered him got the reply: "Bother? Good gracious, no! Why, the only way to get —'s bus into the air is to taxi to the sewage farm *remou* and get pulled off the ground by it!"

Aviators are usually more or less conversant with the French language, but some of them occasionally make hay of it, as in the case of one who informed a French flier that his machine was "Ripping—*très chaude matière*."

Another specimen from a sportsman who, on being asked how he was going down to Brooklands, replied: "J'irai à Waterloo par le terrain d'atterrissage Bakerloo!"

Concerning the recent flying at Hayward's Heath, a correspondent writes: "Messrs. Pixton, Morison, and England certainly routed Hayward's Heath." Pixton literally outdid Coriolanus when, like an eagle in a dove-cote, he fluttered the Sisters of the Holy Cross Home on his wonderful descent from heaven amongst them. These ladies are a Church of England sisterhood, and one of them gave me a graphic account of the proceedings. It appears that the Mother Superior could not get her brood in to Vespers, as they were all fascinated by either Pixton or his machine. The sister's description of his departure was delightful: "They first of all twisted the propeller and wound the machine up. Then they all had to hold it back, and when he put up his hand they let go, and the machine rose gracefully, and he flew off like a duck!" Again I do not know whether the machine or Pixton was described by this last.

A neighbour of mine is fond of coming in and giving me 'sly digs' whenever there is an accident or other occasion. He thought he had a glorious chance when the text of Winston Churchill's unamed Bill was published. He highly commended it, and, like Brutus, paused for a reply. I told him that Churchill was not sufficiently practical. He ought to have brought in a preliminary Bill to prohibit flying in Germany and France."

[The Minister of War announced that the Air Battalion possesses ten aeroplanes.—*Vide Daily Press*.]

Ten little aeroplanes on paper look so fine.

One is an ancient Wright, and so there are nine.

Nine little aeroplanes, somewhat up-to-date,

The "Type XII." Blériot really makes eight.

Eight little aeroplanes, rather less or more,

Half ain't delivered yet, and so there are four.

Four little aeroplanes, on the ground so free,

Someone tried the Farman, and then there were three.

Three little aeroplanes, on the ground to view,

Up went the de Havilland, and then there were two.

Two little aeroplanes, Paulhan's "bus" was fun!

But when it came to landing it—then there was one.

One little aeroplane, engine over-run,

Playing on the test-bench, and then there was none.

(N.B.—Some of them have been repaired by now.—*ED.*)

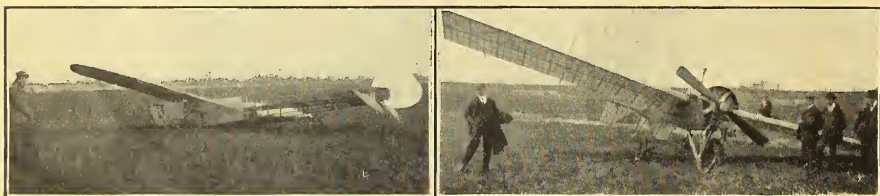
The little group of real aviators was discussing the methods of birds when flying, and one of the group held out that the pigeon was one of the cleverest fliers. To him said the monoplane crack: "Oh! A pigeon's a good enough flier, and his *vols planés* are pretty good, but he doesn't finish them properly. He always switches on before he lands." "Yes, that's so," said another. "Now, I've seen a skylark 'pancake' vertically for 10 ft. and never attempt to get any headway on. That's what I call landing!"

The pilot aviators were discussing lubricants, and standing admiringly beside them was the intelligent barber.

Said the first aviator: "—'s is very good oil."

"Yes, but it is horrid expensive," replied the second.

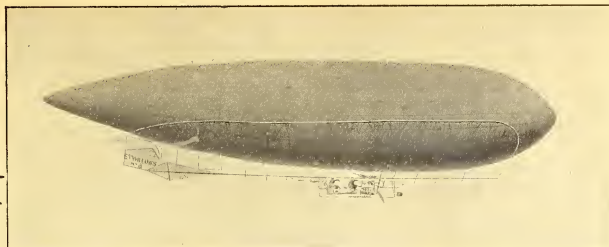
Then came the barber's chance:—"Pardon me, gentlemen," he interrupted, "but if it is 'Air-oil you want, may I recommend my special quality at 1s. a bottle?"



Two methods of landing—Left, Mr "Smith" on the Big Bat; Right, Sopwith on the Martin Handasyde.



THE CITY OF  
CARDIFF."



Built throughout by  
E. T. WILLOWS

## E. T. WILLOWS, LTD., Aeronautical Engineers.

MAKERS OF BALLOONS AND DIRIGIBLES OF ALL KINDS.  
Aeronautical Instruments supplied. Tests made & repairs undertaken.  
EXHIBITIONS ARRANGED. ENQUIRIES INVITED.

E. T. WILLOWS, LTD.,

HEAD OFFICE:  
24-32, Villa Rd., Handsworth, Birmingham.

# HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



Eight Types

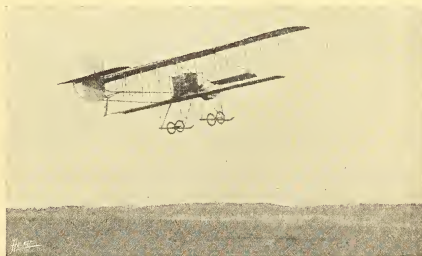
## Monoplanes

From 40 to 80 [miles per hour.

## Biplanes

From 36 to 50 miles per hour.

Catalogue on Application.



Winner of De Forest Prize,

# ANTOINETTE AEROPLANES

The Most Stable.

Will fly in wind of 40 M.P.Hr.

Specially Strong Design and Construction.

Motors, Powerful, Reliable and Durable.

## NEW CROSS-COUNTRY PASSENGER TYPE.

As used by HUBERT LATHAM for his recent flight  
from BROOKLANDS TO OXFORD and back.

WINNERS of the "GRAND PRIX DES CON-  
STRUCTEURS" at the REIMS MEETING, 1910.

Piloted by LATHAM, LABOUCHÈRE and THOMAS.  
Prizes at many other Important Meetings.

**WINGS.**—Specially designed to give the Pilot a clear view  
in every direction.

**M. LEON LEVAVASSEUR**, the well-known engineer of the Antoinette Company, instead of attempting any minor alterations or improvements on his original machine, has for the past two years devoted his entire time to the production of a completely new monoplane, preserving all the excellent points of the present pattern, but introducing other ideas of the highest practical importance.

**ENQUIRIES** should be addressed to "**The SOCIÉTÉ ANTOINETTE**,"  
**Brooklands Aerodrome**, where machines can be inspected.

## The Safety of the "Vol Piqué"

AND THE IMPORTANCE OF AN "AIR SPEEDOMETER."

Methods of landing, or more properly the stages of landing, may be divided into three kinds: the *vol piqué*, or dive; the *vol plane*, or natural glide; and the *vol pancake*, or flat sit-down. Unless they follow one another in proper sequence, and begin at the proper moments, any one of them may be disastrous, but each in its proper place is right.

An article has recently appeared in one of our French contemporaries, the author of which, M. Alexandre Sée, advances a very ingenious theory by which he accounts for certain apparently inexplicable accidents which have occurred at the end of *vol planes*.

He states that there always exists, near the ground, a region of calm air. Suppose, now, a 50 m.p.h. machine gliding down against a wind of 15 m.p.h. An aviator, as a matter of course, always lands head to wind.

This machine is only making 35 m.p.h. land speed; so that if it descends into a calm region it must certainly dive till it attains 50 m.p.h. land speed. If the machine, continues M. Sée, were high up, this would be of little importance; but in the conditions of this case the probable result is a landing at an angle so steep that no skids in use at present can possibly save the machine.

As remedies, M. Sée suggests, first, the avoidance of all sheltered spots as landing grounds, and, second, since a slow speed involves less diving, he says that the aviator should descend with his machine at the slowest possible speed, and should switch on before landing.

With M. Sée's conclusions I quite agree (always supposing that the calm region is more than a figment of imagination); but as to his proposed remedies, I am totally at variance with him.

Firstly, his suggestions are often quite impracticable. One need only take the case of a motor stopping during a cross-country flight, which at one fell swoop restricts the choice of landing, and forbids the restarting of the engine. Also, I think that his principles are wrong.

A machine gliding at its minimum speed is in a ticklish position—it is like an aeroplane flying with only just power enough to lift, i.e., it has no reserve of power. If, however, the aviator takes care, in descending, to glide above his flying speed, he has in hand a supply of surplus energy which will allow him to jump, or which, in case of such lack of support on entering a region of calm, as mentioned above, will let him keep his course instead of diving.

Take, for instance, a machine of the type of a Gnôme-Biérot, which, with 40 h.p. actual, will rise at about 1 in 5, and travels about 80 ft. per second, a vertical velocity of 16 ft. per second. We take the weight of the machine as 800 lbs., and suppose it to be gliding down at 20 per cent. over its normal speed (i.e., 96 feet per second), we find that his excess energy amounts to 35,200 ft. lbs.

$$E = \frac{1}{2} W (V_2^2 - V_1^2) = \frac{400 \times (96^2 - 80^2)}{32} = 35,200$$

Now the power necessary to rise is 40 h.p., or 22,000 ft. lbs. per second. Therefore he can rise at this angle (1 in 5) for 1.6 seconds, which means, since his vertical velocity is 16 ft. per second, that he can make a jump of over 25 ft. high, climbing just as if his engine were running, before he gets down to his minimum flying speed. Conversely, if he loses support near the ground, and if the support lost be such as to produce anything less than a 25 ft. drop, he can, by simply using his elevator, keep perfectly on his course for over 40 yards.

Thus we see that the *vol piqué* (which is defined as a glide steeper than the natural angle, and made at a speed above the normal flying speed) is really much safer than the true *vol plane*—a fact recognised by many experienced aviators, but not generally known.

### Wanted: A Speedometer.

The above considerations will impress upon any thoughtful person the importance of having on board an air speedometer. "An instrument to show the direction and magnitude of the land speed seems at present to offer difficulties, but an air speedometer is just as important, and could be constructed and placed on the machine by the pilot himself—only, unfortunately, it would be difficult to calibrate.

All that is required is a U tube, half full of liquid, open

at one limb, and with the other connected by flexible tubing to an open tube pointing in the direction of movement. Such an apparatus need cost no more than a few shillings, and, if manufactured, could be calibrated, by comparison with a standard, without trouble.

It must, of course, be fitted intelligently. The tube must be truly facing the front, must be free from the draught of a tractor screw, and must be placed away from any region of extra high or low pressure. The simplest position fulfilling these requirements is to attach the tube to the leading edge of one wing, well clear of the propeller circle, and with the end of the tube projecting from 8 in. to 12 in. in front of the wing. The flexible tube could easily be led back to the fuselage along one of the stay-wires.

A further development of the idea is to branch the flexible tube, leading the branch off to a second U tube, the other limb of which is connected to a pressure tube immediately in rear of the propeller. Before attaching this pressure tube it would be necessary to try it in various positions, from the boss to the tips, so that it could finally be fixed in a place where the propeller draught has an average value.

This U tube, reading the difference between the air speed behind the propeller and that away from it, will give, by its reading, the speed of the slip-stream—a most useful figure, for it gives a more accurate indication of the running of the engine than any speedometer.

It is also most valuable when testing propellers, as it shows which out of several propellers will drive the machine most economically.

Also, last but not least, this is the only method by which the pitch of a propeller may be accurately estimated. It is only necessary to have an ordinary revolution counter on the engine, and to add the two tube readings. This gives the "PN" (pitch by revs. per min.) of the propeller; the speed if there were no slip. Dividing by the revolutions gives the actual pitch.

As an indication of the vagueness of ideas at present held about pitch, the following true story may be interesting:—

One of our best aviators (not merely a prominent one, but also a really clever man, who knows a lot about flying) was asked the speed of his machine, and gave it as forty miles per hour. This was at once received with vociferous disbelief (the scene was at Brooklands), since all the other men agreed that it was at least forty-eight miles per hour. However, our friend stuck to his point, and gave as his reason that even if there were no slip the propeller would only make forty-two miles per hour, and that no tractor propeller could have 15 per cent. negative slip!

The truth was that he had measured the pitch on the face of the blade, taking no account of the fact that the air was deflected to a greater angle by the humped back of the blade.—P.K.T.

### THE SPIRAL "VOL PLANE."

Some time ago, when Mr. Archibald R. Low, who has of late been in France acquiring the latest Continental knowledge, was flying at Brooklands, he developed a fondness for descending in a steep and prolonged spiral glide with his engine standing still. The performance looked dangerous, and the present writer ventured to remonstrate with him on the risks he was taking in the course of his experiments with spiral *vol planes*.

Now Mr. Low, though one of our finest pilots, is a man who trusts himself on flying by reason alone, and disclaims all natural ability, knack, or instinct, so it is not surprising that he should be able to give chapter and verse for every movement. It must be confessed that his arguments are very convincing, and should alter the opinions which many aviators hold on the subjects of the manoeuvres with which he deals. Mr. Low, in reply to the writer's remonstrances, sent the following letter:—

"I have recently seen an excellent photo of Captain Wood doing a *vol plane*, and, making allowance for foreshortening, calculate his angle of descent as 1 in 4.3, or 13 deg. The component of gravity parallel to his line of glide would be about 256 lbs., and as we reckon the Gnôme pulls about 240 lbs. at 38 miles per hour, he is just about right for a perfect *vol plane* on a calm day.



# THE NEW TYPE B VALKYRIE MONOPLANE

HAS NOW BEEN TESTED  
AND HAS PROVED AN UNQUALIFIED SUCCESS.

- ☐ Estimated speed 60/70 miles an hour.
- ☐ Still greater stability.
- ☐ Engine and Propeller behind.
- ☐ Valkyrie landing carriage.
- ☐ Carries a passenger.
- ☐ All-British in both design and manufacture.
- ☐ Guarantee: Any reasonable height; figures of 8;  
spiral vol planes; complete circuit with  
pilot's hands off controls.

THE machine for cross-country work and 1911 competitions.  
Especially designed for Military Service.

Orders now accepted. Finest Workmanship. Quick Deliveries.

TYPE A.

Single Seater; 45 Miles an Hour.

TYPE C.

Passenger-Carrier; 40/50 Miles an Hour.

ALL THREE TYPES FLYING DAILY AT HENDON.

ASSESSOR FLIGHTS  
FROM £2.

EXHIBITION FLIGHTS,

## School of Flying.

Numerous School Machines.

Tuition Free to Purchasers.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

Full Information on Request.

THE AERONAUTICAL SYNDICATE, LTD.,

ESTABLISHED MARCH, 1909,

At the FLYING GROUND

(6 miles from the West End),

COLLINDALE AVENUE ./. WEST HENDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.



"On a gusty day one must come down much steeper, so that if you meet a gust you have a great reserve of energy to overcome it. There is nothing so nasty as meeting a gust without a reserve either of kinetic energy in the machine or of thermo-dynamic energy in the motor—e.g., Morison's accident at Issy and Burke's at Farnborough.

"Against this we have the stock argument that the faster you come down the more is your head resistance, and, therefore (!) the more your stresses in the frame of the machine. It has only to be pointed out that the motor thrust is concentrated on the shaft and that the component of gravity is distributed proportionately to the weight, to make it clear that the conclusion *non sequitur* on these premises. Further, the vibration of the motor is eliminated in a *vol plané*, and vibration requires a safety factor.

"I have not yet actually worked out stress diagrams, but I fancy that one can safely add 50 per cent. to one's speed, or 44 per cent. to the head resistance, without stressing the wires to the safety factor (without vibration) that corresponds to the actual flying safety factor, taking vibration into account.

"As for turning *en vol plané*, you simply turn and *vol plané* at the same time. As your banking angle is never more than 20 deg., this only adds about 5 per cent. to the stresses on the wires supporting the component of weight normal to the line of gliding. (20 deg. is a very outside figure.)

"As for landing into the wind, I always manoeuvre to

land into the wind, and think a man who does not do so habitually and without thinking has something to learn.

"The only reason for doing a spiral *vol plané* at Brooklands is a desire to land near the sheds without having to roll half-way across the ground.

"The ordinary turn takes one too far out, and I did not like to cross the track as the wind was sending up nasty eddies. Now the curvature of a circle and a spiral being the same, the spiral has a projection on the ground which is a circle smaller than the circle of equal curvature with the spiral. In addition, coming down faster *en vol plané* one can bank more and turn faster.

"Feeling quite comfortable about stresses in the wires the obvious thing to do was to come down in a good, steep spiral, and straighten out just before landing into the wind, with a velocity of about 8-10 m.p.h. over the ground.

"Even if I smashed four times at that speed (and a dying gust let me down suddenly a foot once) the engine would simply go straight through on to the ground at the worst, as it would have little energy to bring it flying forward.

"Conclusion: it is safer and easier to land in a steep spiral than to manoeuvre in any other amateurish way you care to mention. The alternative was a figure of eight, the spiral not being quite so necessary at the end, but still convenient. I should add that one had to keep higher going behind the sheds than in front, on account of gusts off the track, I suppose." Will some of our readers please note? C. G. G.

### Alterations at Hendon.

Anyone visiting the Hendon Aerodrome now, after a lapse of even a week or two, would scarcely recognise it for the same place. Instead of merely a huge expanse of grass, with a couple of rows of sheds along one side, it has now taken on the aspect of a properly organised aviation ground. In fact, it is, so far as the writer knows, the first aviation ground in which a regular effort has been made to keep the public safely away from the machines and yet to give them a close view.

In front of each existing row of sheds is a lawn for spectators, railed off by stout iron railings from the ground in front and from the sheds behind. This lawn is reached by a big gateway, which has recently been made at the lower end of the first row of sheds. On entering the ground by this gate one finds the 55. lawn stretching to right and left, the railings being placed sufficiently far in front of the sheds to allow machines to be wheeled in and out comfortably, and at the same time to give the people in these enclosures a close view.

The railings are not high enough to interfere with the view in any way, but they are sufficiently high and uncomfortable as to their tops to prevent anybody from climbing over them. They are also so stout that if an aviator landed too close, so that his machine ran along into the railings, they would certainly stop him before he did much damage, although possibly they might be knocked down in the process.

At some little distance behind these railings is a low rail, about a foot from the ground, marking off the section of the lawn on which motor-cars can stand, the railing thus preventing the motor-cars from encroaching on the space due to people who are sitting or standing by the rails.

In order to prevent any reasonable objection on the score of danger to those in the enclosures, a rule has been made that no aviator passing outside the ground may return to it over the enclosures at a height of less than 500 ft., and this rule will, of course, prevent the nervousness one sometimes sees exhibited by spectators when an aviator with a good deal of confidence in himself and his machine does a *vol plané*, missing the sheds by about 6 ft. and the heads of the people in front of them about 3 ft., a trick which is all too popular at almost all aviation grounds.

At the top end of the right-hand enclosure a club-house is to be erected, with a separate enclosure of its own, and as it is right on the top of the hill it commands a view over the entire ground to the northernmost end. The subscription to the proposed club is not yet fixed, but it is not proposed to make it very large at first.

To the left of the present entrance another enclosure, also with an iron fence, has been erected, and this will hold some thousands of people and some hundreds of cars. It will be cheaper in price than the other two enclosures in front of the sheds, but it also commands an excellent view of the whole ground. Beyond it again is a somewhat smaller and cheaper enclosure, also affording a fine view, and beyond that again

four new sheds have been put up, these being near enough to the cheap enclosure to afford interest to the visitors.

It is proposed that the price of entrance to the highest priced enclosure shall be 5s., and to the cheaper ones 2s. 6d. and 1s., and no doubt, with the rapid spread of interest in aviation which is now taking place in this country, these prices will be easily obtained.

Mr. Grahame-White and his manager, Mr. Livingston, have devoted considerable thought and trouble to making every arrangement for the comfort of the public and the completion of all the work is being pushed forward with every possible speed, so that when the competitors in the "European Circuit" arrive here (as they are expected to do somewhere about June 25th), the Hendon Aerodrome will be quite ready to accommodate in comfort the many thousands of people who will be drawn there by the prospect of seeing the most famous of Continental aviators after their tremendous journey.

### Changes at Freshfield.

Mr. C. Compton Paterson, who did so much good work at Freshfield last year and early this year, has now definitely joined Mr. Grahame-White at Hendon, so there will be an added chance for visitors to see good flying in uncertain weather, for Mr. Paterson has already proved himself thoroughly capable of flying in any wind which allows any flying at all. Mr. Paterson's former pupil, Mr. R. A. King, now a qualified pilot, remains on at Freshfield, where, it is said, the hangars and general establishment are to be taken over by a strong syndicate.

### Tétard at Work.

Maurice Tétard, the clever little "Bristol" pilot, made a very fine flight on May 30th. Starting from the firm's works at Filton on the new "Bristol" racing biplane, which is reported as being a very fast machine, passing close to Mr. Stanley White's place, "Hollywood Towers," Tétard went on over Avonmouth Docks and out over the Bristol Channel at a height of 2,000 feet. Turning southward, he went along the Somerset side of the Avon as far as Pill. Here he crossed to the Gloucester side again, and returned to Filton. The flight is particularly interesting, because it was the first lengthy flight on the new light "Bristol." Tétard was delighted with the machine, and said he had no trouble whatever, except from cold, as he had gone up in his ordinary clothes.

### Flying in South Wales.

South Wales has been particularly backward hitherto in the matter of flying, although it has to its credit the production of the only dirigible that has any claim to practical utility, namely, that of Mr. E. T. Willows. It is, therefore, satisfactory to hear that a serious attempt is being made to arrange exhibition flights at Cardiff at an early date, and that it is quite possible that a prize will be put up for the crossing of the Bristol Channel from Cardiff to Weston.

## OUR AVIATORS. I.—Claude Grahame-White.

If the average Britisher were asked to name the half-dozen finest fliers in the world, I suppose most of him would start by saying "Grahame-White." And, as a matter of fact, the statement would not be far wrong, for, if G.-W. himself were asked the same question, even personal modesty could scarcely prevent him from including himself, if he wished to be really truthful. Even the most critical must admit that his handling of a biplane is masterly, and his feats in America show him to be in the very front rank of monoplaneists also.

Claude Grahame-White was born at Southampton on August 21st, 1879, and was educated at Crondall House College, Farnham, and at Bedford Grammar School, a school which has given us two or three other aviators as well. By profession he was originally a mechanical and electrical engineer; later he took up motoring, and his name became nearly as well known in the motor trade as it is among aviators; but the outside public took little interest in motoring, and Grahame-White did little actual motor racing, so it was not till he suddenly came out as a crack flier that his name became known to the larger public.

His first training as an aviator was got at Issy-les-Moulineux, where he succeeded somehow in flying one of the dangerous "Type XII." Blériots. Thence he went to Pau, in the winter of 1909-1910, and soon mastered the popular "Type XI." Blériot. Early in 1910 he migrated to Marmelon, and there immediately learnt to handle a Farman. Having done so, he returned to this country, where, shortly afterwards, he suddenly acquired worldwide fame by his two plucky attempts to fly from London to Manchester.

It is greatly to his credit that he is a self-taught flier, never having had the advantage that the modern pupil has of being able to go up as passenger with a school instructor and take partial charge before being left to conduct his manoeuvres alone. As the result of having to work things out for himself, Grahame-White is capable of handling practically any make.

He tells me a fact of some interest, for it shows his natural aptitude, namely, that he received his first experience of sitting in an aeroplane and being told about the controls on November 12th, 1909, and made his first flight the same day.

As for his deeds as a flier since then—his London-Manchester attempts; his early Crystal Palace to Brooklands flight; his flying at Wolverhampton, Bournemouth, and Blackpool; his flights round Boston Lighthouse; his winning of the great Gordon-Bennett race; his winning of the Statue of Liberty Prize, only to be disqualified on a technicality; his magnificent demonstration of flying at Hendon just the other day, before the Ministers of State and the heads of both Services; not to mention his flight over the King and his ships at Falmouth and



Grahame-White, with Miss Murray as passenger.

Penzance, his Hendon-Brooklands flight, and many others; are they not written (to the extent of several volumes) in the chronicles of the Royal Aero Club of Great Britain?

There may be cleverer fliers on the Continent, there may be better ones coming along in this country, there may be men who have done single flights of greater moment, but, taking him big and large, I cannot find any one aviator with a better all-round record.—C. G. G.

## To-night's Meeting of the Aeronautical Society.

The attention of members of the Aeronautical Society is particularly directed to the Special General Meeting of the Society to be held to-night at 8 p.m. at the Royal Society of Arts to consider the Report of the Committee of Enquiry.

It will be recollected that the annual general meeting, held at the end of March, was adjourned, after a distinctly stormy scene, the members showing that the disagreed absolutely with the actions of the self-appointed Council, and with that Council's method of conducting an election when it was shown that an elective governing body was desired.

The points to be carried are: (1) That all those interested in aeronautics must, for the financial welfare of the Society, be attracted to it; (2) that, for its standing as a scientific society, it must include a scientific side embracing only those with scientific qualifications; (3) that the governing body of the Society must be elected by modern methods; (4) that the liability of members must be limited.

The Committee of Enquiry, elected at the adjourned meeting, consisted of Messrs. W. T. Douglass, M.I.C.E., Mervyn O'Gorman, M.I.E.E., Griffith Brewer, J. W. Dunne, J. H. Ledeboer, Handley Page, Alec. Ogilvie, and A. E. Berriman, M.I.A.E., the last-named being the Hon. Organising Secretary. This Committee has drawn up a set of new by-laws, which it is suggested the meeting to-night should adopt.

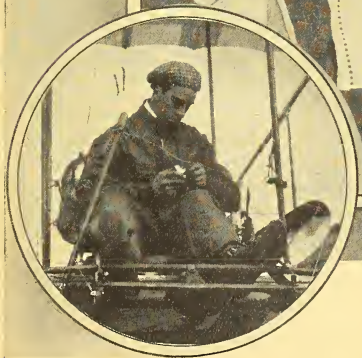
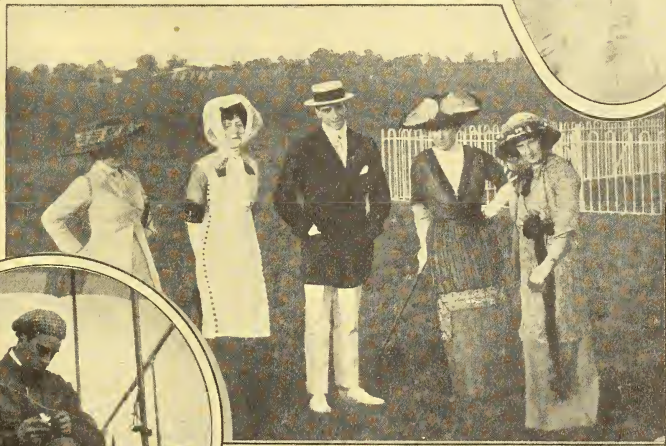
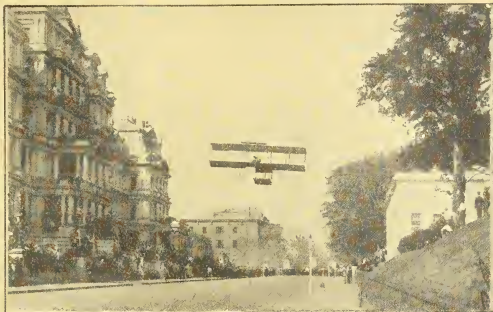
The new by-laws are, on the whole, excellently designed for the welfare of the Society, and it is to be hoped that members will attend in sufficient numbers to make it plain to the present Council that the time has come when the Society must be handed over to the government of young and energetic men who are really conversant with present day developments.

By far the most sensible and graceful thing for the old Council to do would be to resign *en bloc* and submit themselves for re-election purely on their individual merits. It is true that only one or two of them would stand even a remote chance of re-election, but, even so, it would be less humiliating than being deposed by the votes of the members of the Society, which is what will certainly happen if no other way of ridding the Society of the Council as a Council can be found.

Individually the members of the Council are excellent elderly gentlemen of irreproachable reputation, but the present state of the Aeronautical Society is sufficient witness to their collective ability. This Society, the oldest of its kind in the world, instead of being the strongest numerically and financially, has become so atrophied through lack of an effective governing body that for two years it has practically existed on the charity of Mr. Patrick Alexander. It is most earnestly to be hoped that to-night's meeting will, once for all, clear the way for a complete revolution in the Society's affairs.—C. G. G.



## OUR AVIATORS. I.—Claude Grahame-White.



- (1) As a flier—Landing in Executive Street, Washington.
- (2) As the Manager at Hendon—Inspecting the new hangars.
- (3) As host—Showing some friends round the improved aerodrome.
- (4) As a worker—Putting the finishing touches to his own machine.

## The Week's Work.

## Monday, May 29th.

BROOKLANDS.—Gordon England and Versepuy both out on Bristols in the evening. The Blondeau-Hewlett school machines flying morning and evening. The pupils at the Blondeau-Hewlett school now include Messrs. Abbott (of the Lancia Company), Hetherington (18th Hussars), Johnson, and Brown (of New York City). Gordon Bell flying well on the Hanriot of the Fisher school. Jack Humphreys doing short flights on the same machine, generally known as "Henrietta."

## Tuesday, May 30th.

BROOKLANDS.—Gordon Bell, on the "Henrietta," did three flights of ten, five, and three mins., in a wind of ten miles per hour, flying well up, and outside the aerodrome. E. V. B. Fisher, the chief pilot, out for 20 mins., at 500 to 600 ft. over the surrounding country, and another flight at 1,000 ft. Later, Bell went up to 200 ft. Blondeau-Hewlett school at work morning and evening. England and Versepuy, of the Bristol school, out flying high in the evening. The Blondeau-Hewlett school created a sensation by taking Blondeau's old Farman to pieces while it was still in flying order, so as to recover the planes with new fabric. Unprecedented performance. Hitherto an article of faith never to recover a plane till the machine broke somewhere, and made it a necessity.

## Wednesday, May 31st.

BROOKLANDS.—Bristols busy in the evening, both England and Versepuy doing a lot of flying. Napier, a new Bristol pupil, out alone. In the early morning Manistey flew for seven minutes on the "Henrietta." Then Jack Humphreys took the machine out, and, in spite of the chief pilot's warning, tried to do a turn close to the ground. Somehow got involved with telegraph wires and long grass at paddock end of the ground, turned a somersault, breaking almost everything breakable in the machine, and escaping himself with very numerous small punctures. Can now sympathise with feelings of a pinch. Blondeau-Hewlett school busy, as usual; speciality made here of early morning flights. Cecil Pashley, formerly of the Lane school, and now of the Universal Aviation Company, Ltd., out in the evening on the "Birdling" biplane. Nearly blown down into sewage farm after a single circuit, but managed to jump the bank and save the smash.

## Thursday, June 1st.

BROOKLANDS.—England, on the Bristol, and the Blondeau-Hewlett machine about the only ones to fly.

## Friday, June 2nd.

BROOKLANDS.—England and Versepuy both out on Bristols. In the evening Versepuy left for Russia, to act as instructor to the Russian aviators on the many Bristol machines bought by the Russian Government. The Blondeau-Hewlett school out in the early morning, as usual.

HENDON.—The Valkyrie school at work for the first time since Mr. Benson's accident. Turner out in the early morning, and the chief pilot and Turner each took the big passenger carrier out in the evening.

## Saturday, June 3rd.

BROOKLANDS.—England, on the Bristol, out in the evening, flying in magnificent style, high up, at over 1,500 feet, and finishing with a wide spiral *vol plané*, which took in a circuit and a half of the ground. While he was up Gilmour arrived from Salisbury, and treated the few remaining people present to the finest display of flying seen at Brooklands.

Napier also out on Bristol school machine. This youngster has the makings of a fine flier, if he does not smash himself up first, and will learn to fly, instead of merely taking a machine into the air. On Saturday evening he was attempting tricks which only an experienced flier should perform, flying over the sheds, missing the anemometer pole by a few feet, and taking his machine up at a steep angle, all so low down that, for a portion of every lap, if his engine had stopped he would certainly have smashed himself and probably a few sheds as well, with an excellent chance of setting fire to the whole range of sheds when his petrol tank burst. Considering that he is still so inexperienced that he cannot keep his elevator still for three seconds together, and quite often takes his corners banked the wrong way, such tricks are sheer recklessness. Incidentally he tried a right-hand curve, over the

sheds, and by the time he had done one-third of a circle his tail was so low that it was sheer luck he ever got it up again.

In the early morning England went out with an old propeller which had a slight crack at one tip, and after half a circle a strip three feet long flew off the trailing edge of that blade. Thanks to the solidity of construction of the Bristol machine, the unbalanced blade did not pull the engine bodily out of its seating, as has happened abroad on several occasions, and with more luck than caution England completed his circuit without accident. The possibility of propellers bursting is one of the strongest arguments against flying over, or close to, crowds, for a three-foot splinter of a propeller would be more dangerous than any arrow shot from a bow.

Snowden-Smith out flying high and doing fine *vol planés* on the Blondeau-Hewlett. His gliding is splendid, but the angle is so fine that if he either dropped into an air-hole or met a gust he would have hardly any reserve of kinetic energy, and would either dive or "pancake" badly. Percival busy doing short flights on Billing's tractor-screw biplane, built out of what was once the Neale biplane. Raynham hard at it on the Roe-Franck-Farman, and Watkins on Jack Dare's Howard-Wright, the latter suffering from engine trouble.

HENDON.—The Valkyries hard at work. Lieut. Wells (Indian Army) and Perry out in the morning on the school machine. Turner, Perry, and Gaskell all out in afternoon. Turner also had his first trip on the Gnome-engined racer. Later on the chief pilot made two flights, one of forty minutes and one of twenty minutes, in the course of which he went to Harrow and back and flew two circuits in the aerodrome with his hands off the levers. Afterwards he made a magnificent flight to a height of 3,000 feet, descending on a long spiral *vol plané* amid loud applause.

At 4 a.m. Grahame-White flew one of his biplanes to Ranelagh, motored back, and then flew another over. After giving exhibition flights all the afternoon, he and Hubert flew the two machines back in the evening.

## Sunday, June 4th.

HENDON.—Fine flying nearly all day. The new system of management properly inaugurated, but performances not patronised by public as they deserved, in spite of arrangements for comfort of visitors and a good band as added attraction. Comparatively few people present in evening, when best flying was done. Grahame-White on the new military Farman and Compton-Paterson on the ordinary Farman-type biplane doing very fine work, sharp right and left turns, spiral *vol planés*, and slow flat glides following in quick succession. Compton-Paterson now among the front rank of biplane fliers. Hubert and Greswell also at work. In the evening the latter left to do exhibitions at Longton, in the Potteries. Comte Jacques de Lesseps among the visitors. Hamel away exhibiting at Warwick Yeomanry Camp.

Valkyries at work in the evening. Lieut. Wells practising on school machine. The pilot-designer-manager made a long and extremely fine flight on the Valkyrie-Gnome, reaching heights varying between 1,000 and 2,000 feet, and gliding down with the engine shut off over and over again. This machine is now thoroughly tuned up, and is a most startling climber. She seems to rise on an even keel as fast as, or faster than, the ordinary 50-h.p. monoplane does with its tail down, and the writer saw her get up to 500 feet in half a small circuit at Hendon. Her pace is also terrific, and many good judges estimate her to be faster than other monoplanes with the same engine. Her gliding angle is very good, and she is remarkably steady fore-and-aft when the power is shut off or put on. The P.-D.-M.'s trick of flying "hands-off" is becoming a habit, for the writer timed him for over two minutes at a stretch flying with his hands over his head at a height between 500 and 800 feet. Incidentally the P.D.M. is suffering from hay fever, and finds a rarified atmosphere does him good, so his favourite height now is somewhere about 2,000 feet. This machine must be seriously reckoned with in the big events of the future, for some new ideas now coming through should make it even more efficient.

BROOKLANDS.—The tenants all tuning up for Whit-Monday. Both Bristols going in good form, and Pixton, the latest addition to the team, very quick at picking up the lever control, which is new to him after the Avro. Watkins getting better results out of the E.N.V., which is now barking like his



old one. The new Avro nearly ready, and the Farman-Avro going well. Fisher out on the little Martin-Handasyde, doing over sixty miles an hour with J.A.P. engine, but owing to diffusion of oil over surrounding landscape unable to see.

#### Whit-Monday.

BROOKLANDS.—A truly gorgeous exposition of flying. At times during the afternoon there were in the air, all at once, two Bristol, a Farman, an Antoinette, a Valkyrie, a Cody, a Howard-Wright, and an Avro. The pilot-designer-manager of the Valkyrie Company flew over from Hendon in the morning, and Cody came from Aldershot. At 10 a.m. Cody put in over an hour's flight with a passenger for the Manville prize, so tying with Pixton. First man out in the afternoon was Gilmour, on the military Bristol, badly pitched about in a gusty wind. Later Latham appeared on the Antoinette. After a few beautifully banked turns, he tried to do a very sharp one near the track, and was carried by the wind into an eddy, which always blows downwards at that spot, and this let him down so that his left wing-tip hit the roof of the shed, and the whole machine turned an edgewise cartwheel, just as a street urchin does it on his hands. The nose of the machine buried itself in the roof of the shed containing the small Martin-Handasyde, which was damaged by falling timber. Fortunately the roof held, and prevented the machine from turning over on to its back, and there it stuck with its tail in the air. Latham's belt prevented him from being slung out on to his head, but the seat to which the belt is riveted gave way, and let him down gently on to the upper stay-wires of the wings, whence he clambered on to the roof itself. By means of water-spouts, ladders, poles, and anything else handy, half Brooklands clambered on to the roofs of the range of sheds, and, finding Latham nuyurt, Gilmour, Radley, Roe, Blondeau, Delacombe, Turner, Drexel, Parke, Fisher, and a few more proceeded to hold an "inquest" on the wreck. Some held that the chain which operates the working wires broke, but the more reasonable view is that Latham, not knowing of this eddy, cut things too fine. Naturally, the chain broke with the shock, as it had to take it direct, but M. Castambide told the writer that this chain has a factor of safety of 100 to 1 against any air strains, so it could scarcely have snapped in the air. The whole thing was an object-lesson against sitting in front of the engine and against not strapping oneself in.

Almost directly after Latham's smash England and Gilmour went out on their Bristol, and did some fine flying, and then Labouchere, Latham's cousin, brought out the second Antoinette to test it, and, finding it all right, Latham came out again and did some more fine flying, but tried no tricks. He was loudly cheered for his pluck. Pixton, now of the Bristol team, took over England's machine, and flew for nearly an hour. Young Raynham, of the Avro team, on the old Farman which Mrs. Frank Hewartson smashed herself with at Bolden Race-course, flew for just over an hour. Watkins got Jack Dare's Howard-Wright, flying in really good form. Conway Jenkins, with a rudder bar built too close for his length of leg, had to fly in the position of a trussed chicken.

Later on the Valkyrie designer took his machine up to about 2,000 ft., flying "hands off" on the way, and did a remarkably clean *vol plane*, which was greeted with rounds of applause. Cody also did some fancy flying, including his famous

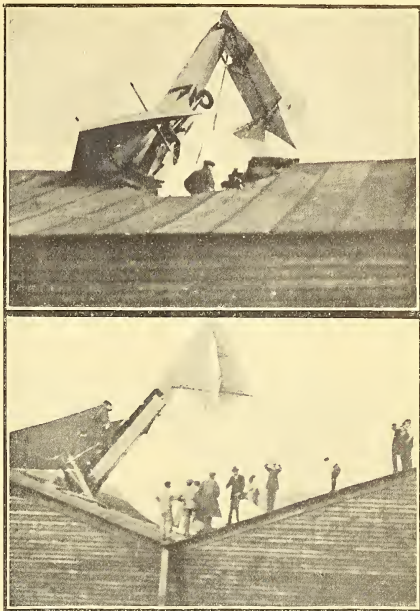
#### Provincial Flying.

Mr. H. J. D. Astley had bad luck with his Birdling monoplane at Fyfehall on Whit-Monday, running into a wall when starting. Mr. Gustav Hamel was booked to do an exhibition flight at Warwick, and Mr. Clement Greswell was at Stafford, both with Gnome-Bijoriots. All these flights were arranged by the Universal Aviation Co., Ltd.

#### Mr. Ogilvie at Eastchurch.

Mr. Alec Ogilvie has now given up flying at Camber, and has located himself at the Royal Aero Club grounds at Eastchurch, where he will have a better opportunity of practising for the Gordon-Bennett Race.

Before moving from Camber he had done quite a large amount of flying on his transformed Wright machine with the N.E.C. engine. This machine, it may be remembered, was one of the original Wright type from which the elevators had been removed and the elevation control transferred to a tail behind the rudders.



**LATHAM'S SMASH ON WHIT-MONDAY.**—Above, Latham is seen examining the wreck. Below, he and his mechanics are explaining things to Radley and Gilmour.

imitation of a reaping machine. The Cody machine is a wonder, and the way Cody flies a few feet off the ground without actually touching it, even when turning, is one of the cleverest things to be seen. Somewhere about 8 p.m. the Valkyrie went back to Hendon, disappearing at a height of over 2,000 ft. Cody also flew back to Aldershot. The scores for the Aggregate Prize were: Raynham, 61 mins. 47 secs.; Pixton, 58 mins. 22 secs.; Watkins, 38 mins. 16 secs.; and England, 20 mins.

HENDON.—Good work at Hendon all day. Grahame-White, Hubert, and Compton Paterson all passenger carrying the whole afternoon and evening. On several occasions Grahame-White took up two passengers at once.

A number of flights varying in length from half-an-hour to three-quarters of an hour, and often totalling to three or four hours per day have been made, and the individual flights could have been made considerably longer, but that they were purely for experimental purposes.

Mr. Ogilvie told the writer that he has been much pleased with the behaviour of the N.E.C. two-stroke engine, and believes it to be in principle and practice one of the finest aeroplane engines in existence.

#### Mr. Gilmour's Acquittal.

Congratulations to Mr. D. Graham Gilmour, who, on the 20th, was acquitted of all responsibility for the death of the child Reed, who was fatally injured by his car at Wylve, near Salisbury, on April 20th. The case is apparently exactly analogous to that which happened some years ago on the Birmingham road, when a car driven by a chauffeur killed another child. The youngster was hanging on to the back of a cart, and on hearing the car approach, dropped off and ran across the road practically under the car.

## "Plain" Tales of the Air Battalion.

(BY ONE WHO KNOWS.)

No. 2 Company of the Air Battalion has at last arrived at Salisbury Plain. Why it has been so long getting there, and why so much valuable practice time has been lost is, of course, one of those interesting official mysteries to which a long-suffering nation has become entirely accustomed.

The Battalion was enrolled a considerable time ago, and, as most people connected with aviation know, it is under the command of the officer who presented the guests at the Royal Aero Club dinner with such an able and enlightened *résumé* of the progress and present position of aviation. Also its headquarters are at the Balloon School at Farnborough.

Under all circumstances, it is not to be wondered at that the Air Battalion's stock of machines is not up to date. It comprises an antique Wright; a somewhat antique—and very dangerous—Blériot; the Paulhan, of a type no longer sold by Paulhan; a de Havilland; a Henry Farman; four Bristols; and a Howard Wright. All slow biplanes, except the impossible Blériot.

There is only a portion of the Air Battalion on the Plain: the rest remains at Farnborough to play at ballooning. The Plain detachment consists of about fifty men of No. 2 Company and six officers. The latter are Capt. Burke, Royal Irish Regiment; Capt. Massy, Indian Army; Lieut. Barrington-Kennet, Grenadier Guards; Lieut. Cammell, Royal Engineers; and Lieut. Reynolds, Royal Engineers. These are all under the charge of Capt. Fulton, Royal Artillery.

Capt. Burke learnt to fly and took his certificate at the Henry Farman School at Etampes. He brought over the Farman machine to Farnborough at the end of last year, and has been trying to fly under the great difficulties which Laffan's Plain presents to all aeroplanes and the War Office to all pioneers. His appreciation of Salisbury Plain is most evident, and since he got his machine out on the 18th has been flying well and consistently. He is an attractive flier, always taking his turns with a pretty bank. It is understood that he uses his altimeters before his rudder in turning.

Capt. Massy's machine is not yet ready, nor is Lieut. Reynolds's. Both these are to use Bristols, but for some reason the Government decided that they were to be fitted with Renault engines. The Government seems to have the idea that all that is necessary to do to get a fast machine is to put in a bigger engine, and so there is no difference in design between the Bristols with the 50-h.p. Gnome and those to which the Renaults are to be fitted.

Needless to say, the Renaults have not arrived yet, nor are they likely to do so for months, so Capt. Massy and Lieut. Reynolds are machineless. Still, it is of no great consequence: even if the machines were ready the sheds are not.

Lieuts. Barrington-Kennet and Reynolds are sharing a Gnome-Bristol. The former took his certificate on an Anzani-rot at the Drexel-McArdle School at Beaulieu. It did not take him long to handle the biplane, but at present he seems to find the difference of landing between the two types puzzling.

Lieut. Reynolds had not flown before his arrival here, so

Mr. Cockburn volunteered to teach him. The pupil showed himself so much at home on the machine that Mr. Cockburn only gave him two lessons. After that straight flights were taken, and then a solo-circuit, and now he has made figures of eight, and has taken his certificate.

Both Lieuts. Barrington-Kennet and Reynolds look like developing into fine fliers. Unluckily their machine has been in dock owing to a heavy landing, and the amount of damage sustained by the machine without hurting the aviators was extraordinary. Repairs took a week.

Lieut. Cammell has not got a Government machine at present. He depends on his own private Gnome-Blériot, and goes up surrounded by a crowd of instruments. He is quite master of the machine in the air, loves height, and seems to prefer cross-country work to aerodromes. Landing seems his weak point. Why is it that there are so many fine monoplane fliers who find difficulty in landing? Most people could give the names of two or three of these.

The latest joined pilot is Capt. Massy. He learnt on a Bristol, and took his certificate under the new rules quite recently on the Plain. So far he is not having much fun, waiting for one of the Renault-Bristols.

In command is Capt. Fulton. He is pretty well known, but it is interesting to recall that he began his flying by purchasing an Anzani-Blériot and learning to fly without any instruction, doing his own repairs, and filling in his spare time by inventing things in connection with his own arm—artillery—and selling the patents to the Government. Finding the Anzani unsuitable for certificate lifting, he borrowed Mr. Cockburn's old "Father of all Farman's" one day, and come back with the certificate in his pocket. Since then he has not had much chance of flying, but he has been putting in some good work since he got down to The Plain, and would have done more had not his desire for the progress of his portion of the Air Battalion caused him to put the machine which was earmarked for him at the disposal of Lieuts. Barrington-Kennet and Reynolds. He is undoubtedly the right man in the right place.

These are the men who are to fly for the Army, and no one can take any exception to them. They are good men, and will make good pilots, but there are only six of them. What a farce! Sixty is nearer the number required to be of any service, even at the beginning.

And the machines: a collection of three or four hopeless crocks at Farnborough, and none of the rest (not even the new Bristols or the Howard-Wright, with the exception of the privately owned Blériot) capable of doing more than forty miles per hour.

Presumably the authorities, who sit in armchairs and read the papers (lay Press), or who, as the late lamented W. S. Gilbert put it, "like the fountains in Trafalgar Square, they play from ten till four," expect their pilots to go out at manoeuvres under conditions possible only for a sixty-miles-per-hour machine, and on their refusal will congratulate themselves on their prescience regarding the utility of the aeroplane in warfare.

### Gordon-Bennett Racers.

Valentine, just back from Reims, reports that the Deperdussin firm have three startling machines coming through for the French Gordon-Bennett Eliminators. One has a 200-h.p. eight-cylinder Clerget engine; another has two 100-h.p. Gnome engines, one engine under each wing, running in opposite directions, each with its own propeller, and made to synchronise by intermediate gearing in the fuselage. Think of tuning up twenty-eight cylinders! The third has a 50-h.p. Gnome, but the machine itself is so tiny and light that Valentine says the wings look like postage stamps. They must be very interesting to look at, but it is long odds against any of them getting into the French team, and one cannot envy the pilots.

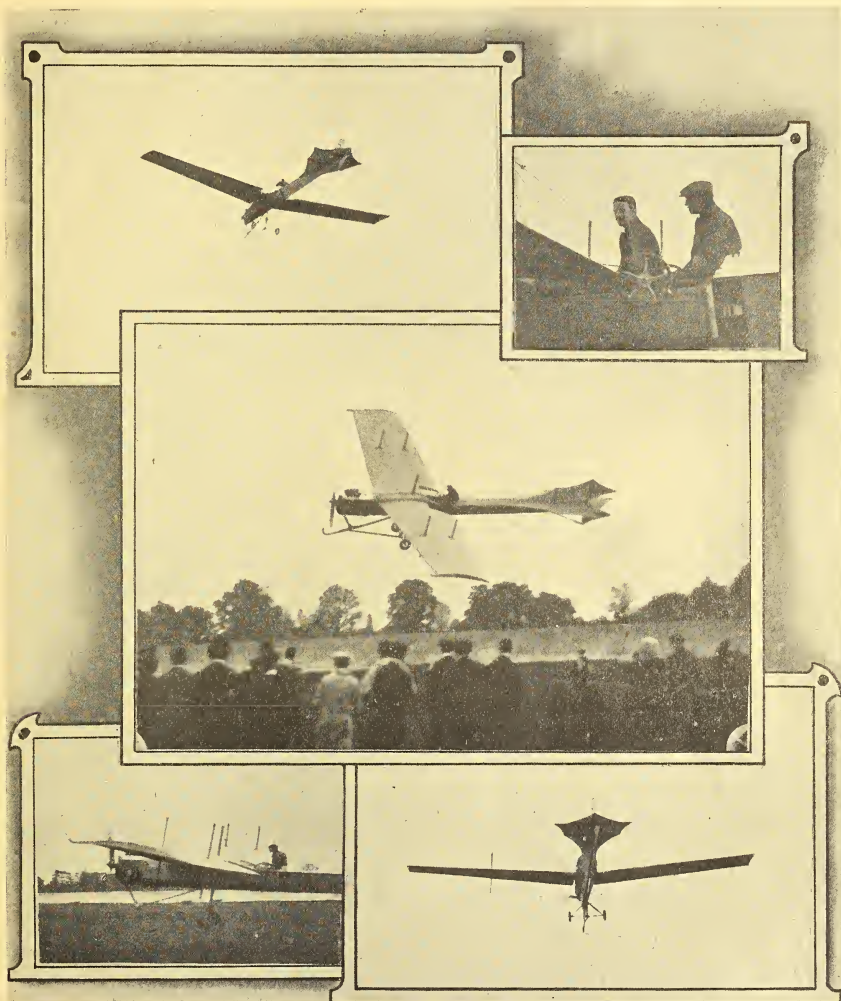
### British Fliers and Foreign Machines.

Sad to say, three more of our really good fliers have gone abroad for machines for the big races. James Radley, seeing he could not get his own machine ready in time, has bought an Antoinette, which should now be flying at Huntingdon. Robert

Lorraine has also bought an Antoinette, and has gone to Mourmelon to learn to drive it. And James Valentine has been at Reims to acquire a Deperdussin. The last-named paid THE AEROPLANE a visit on Saturday last, having reached London that morning, and said that he had tried one of the school Deperdussins with considerable success. Though he weighs over fourteen stone, and the machine had only a three-cylinder Anzani, he managed to fly it for three laps of the Betheny Aerodrome, a matter of 15 to 20 kilometres. Considering that he had never flown a monoplane before, and had been told that this machine would only do short, straight flights, it was by no means a bad performance.

### Some Resurrections.

It is interesting to note that Lieut. Roser (mis-spelt Rasen in some papers) who was killed by the daily press at Jovanishtha a few weeks ago, is now well on the way to recovery. Viatalod, who was killed in Bulgaria, is now out and about, but is not yet flying again.

**Hubert Latham at Brooklands.**

The above photographs were taken at Brooklands during Latham's recent visit. The centre picture gives a good idea of his magnificent turns. In the right hand top corner he is shown with Mr. Harry Delacombe as passenger. In the left bottom corner he is just getting off the ground.



## The Antoinette Monoplane.

The "Antoinette" has always, in the aeroplane trade, been regarded as embodying the best possible materials and construction, and a magnificent design. A short description of the points of the machine may therefore be interesting, especially, in view of the presence in England of M. Hubert Latham—acknowledged to be still the finest flyer in the world—and of the formation of an English Antoinette Company, with the prospects of the machines being built in England in future.

The machine is particularly interesting as being the first to employ a true non-lifting tail and a covered-in fuselage.

The wings are double-surfaced, and of beautiful construction. They are, as is well known, tapering in plan-form and are set at a dihedral angle. The camber is peculiar, being an arc of a circle: it is also symmetrical fore and aft, i.e., leading and trailing edges are identical. The two spars are built with king-posts and ties, and they are stayed to the single central mast and to the chassis, the ties to the rear spar being "running rigging" for control. The front spar is also stayed to the front end of the body.

A new point in the wings is the removal of the trailing edge (as far as the rear spar) for two feet on each side of the fuselage, this being rather important, as it allows the pilot a much better view of the country below and in front of him.

The fuselage is boat-built from the nose to the pilot's seat, aft of which is a latticed structure covered with fabric. It is worthy of note that no wires are used in it, the diagonals being of wood. The whole of the boat-built portion is provided with a turtle-deck, enclosing the engine, and running back to the passenger's seat.

The chassis is of the simplest type, but immensely strong. It consists of a single vertical steel tubular mast carrying an axle with tiny wheels. In front is the well-known projecting single skid, which is now sharply turned up at the forward end.

The control remains as it always has been—two wheels, one on each side of the fuselage, the right controlling the elevator, the left the warp. The rudder is controlled by the feet. I am told, on good authority, that as a matter of fact this control is quite handy when once a certain trick has been learnt. This is, continually to sit looking a trifle towards the right, so that the right wing-tip is *before* the pilot, the left almost behind him. The warp control then becomes instinctive.

The power-plant consists of a Normale propeller, direct coupled to the Antoinette engine, which has always been so full of novel points. The old coil and accumulator ignition has been discarded in favour of a H.T. magneto. The direct injection of petrol into the cylinder is retained, but in a simplified form, which works very well. The throttle is governed by varying the stroke of the pump which injects the petrol.

### FROM PORT MEADOW TO THE CLOUDS.

[The following rhapsody is from the pen of Mr. Gull, Editor of *The Varsity*, who had the good fortune to be a passenger with Mr. Latham when he visited his old University by air. It is worthy of reproduction, as showing the rapidly growing interest in the new sport in this country.—Ed.]

For a few yards the Antoinette ran smoothly along the ground, and then glided gracefully into the air. The meadow seemed suddenly to fall away below us, and the spectators grew less and less in size. What a moment before had been a dense mass of people now looked like a few little black spots on a large surface of green.

Higher and higher we glided, the motor purring loudly like some gigantic cat. In a graceful curve we rounded the circle of the meadow, and then espied a train making its way to Oxford. One could just distinguish the heads thrust out of the carriage windows and white handkerchiefs waving a welcome. Here was an opportunity not to be lost. Mr. Latham allowed his great machine to poise for a moment until the train had passed below us; then, with a sudden dart, we caught it up and passed it. One could have imagined it was standing still.

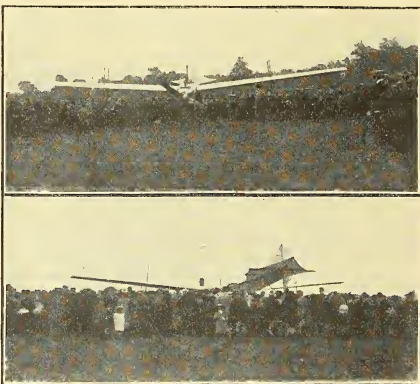
It is possible to converse in an aeroplane, but one must raise one's voice considerably, and then it sounds strained and

The cooling is still on the original method; and, since there is nothing outwardly apparent to distinguish it from ordinary water-cooling, it may be well to explain it.

The engine is run at 212 deg. Fahr., i.e., the temperature of boiling water. There are two separate circulations: one from a tank to the water-jackets and back again to the tank; the other from a steam dome on the tank to the so-called radiators (really *condensers*) and back thence to the tank.

It is impossible for me, in the space at my disposal, to deal suitably with the details of the machine. I can only advise my readers to repair to Brooklands and see it in the hands of its pilots.

I would like to express my thanks to the Antoinette company for permission to take accurate measurements of their machine, for it is, I believe, the first time anyone has been permitted to go over an Antoinette with a foot-rule. I am also obliged to their representatives, M. Goulard and his mechanics, for the information courteously put at my disposal, and for their patience with my somewhat faulty French.—P.K.T.



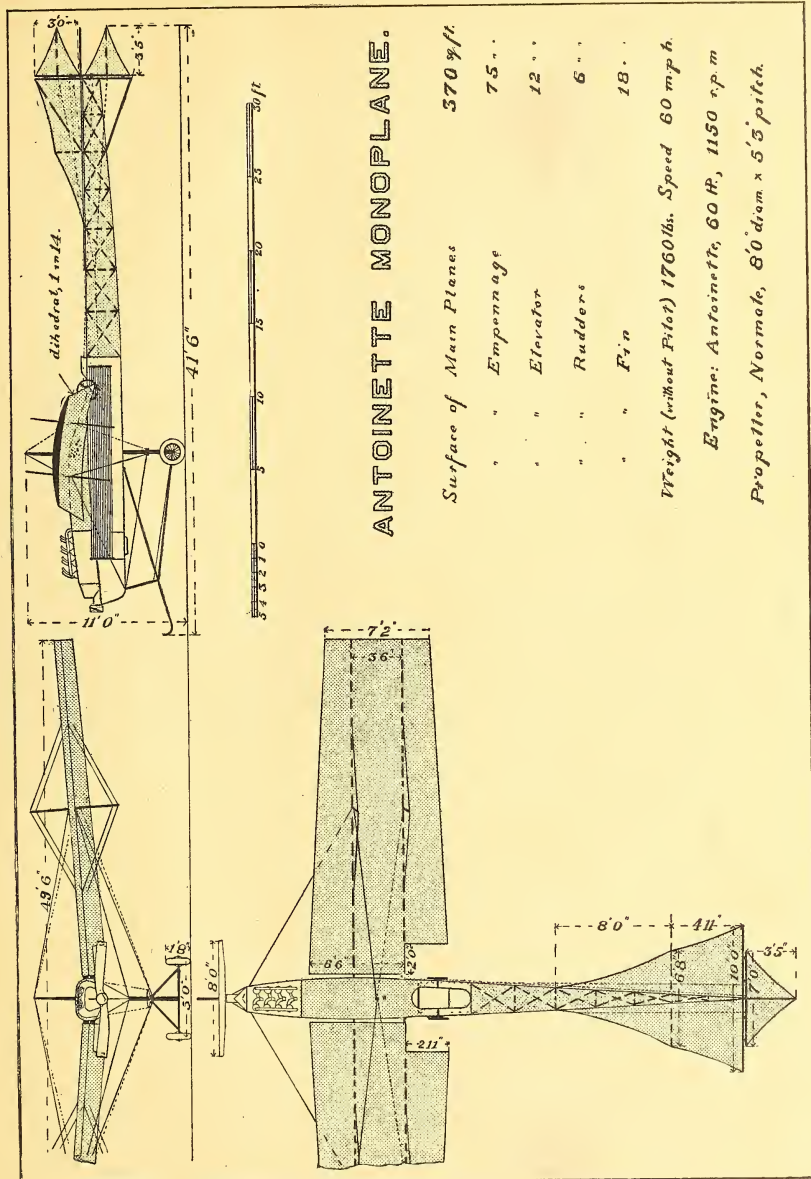
Latham at Oxford. Below, the arrival; above, the departure for Brooklands.

far away. The chief sensation is one of wonderment at the feeling of security and the power of the machine. It is like some huge bird rejoicing in its strength, and there is a desire to shout for sheer mad enjoyment. The wind rushes past one with a shriek, and the flocks of rooks and other birds scatter on all sides, calling indignantly at this invasion of their domain. On all sides the view is magnificent. St. Mary's spire looks like a toothpick in the distance; the Radcliffe dome like a pepper-pot; the trees in the parks like tiny shrubs in a garden border; the city of Oxford is spread out like a box of bricks; the upper river is like a narrow silver ribbon thrown carelessly across a cushion of green.

The little black specks speed quickly over the meadow like ants. They are the spectators running to be there when we land. With a gentle, gliding motion the descent is made, and before one realises it the motor has ceased to purr, and the Antoinette is running smoothly along the ground.

There has been no discomfort; no vibration; no feeling of sickness; no cold. Simply an absolutely unequalled feeling of domination and excitement. The most timorous could not but feel safe in Mr. Latham's care. Danger there may be, but it seems hardly likely, and the experience of an aerial flight such as that of Friday last is one never to be forgotten, but one which one wishes with a great longing to have repeated at the earliest possible opportunity.





### The Results of Paris-Rome.

The "over all" times and prizes of the first three men into Rome were: "Beaumont" (Lieut. de Conneau), 82 hrs. 5 mins. (prizes, 59,000 frs. at Nice, 50,000 frs. at Rome, equals 109,000 frs.); Garros, 106 hrs. 16 mins. (25,000 frs. at Nice, 20,000 frs. at Rome, equals 45,000 frs.); Frey, 132 hrs. 41 mins. (13,000 frs. at Nice, 10,000 frs. at Rome, equals 23,000 frs.). Vidart gets 10,000 frs. for being fourth at Nice.

### Another Lesson.

Starting from Hyères, Lieuts. Lucca and Hennequin had the bad luck to turn their Farman over starting out of a bad ground, with the result that Lucca dislocated his left hip, bruised his back, and hurt his face. Hennequin broke his right thigh and left leg, and sprained his right wrist. Neither are in danger. But the accident shows the difference between turning somersaults—as Garros, Frey, Vidart, Kimmerring and others of the "engine-in-front" competitors did—and doing the same thing on an open-fronted machine.

### A New Scottish Venture.

Mr. W. G. Duncan, who, as secretary of the Scottish Aeronautical Society, was largely responsible for the successful organisation of the Lanark Meeting—the best managed of all British meetings—has now ventured into the constructional side of aviation and has joined the Scottish Aviation Company. The machines are entirely produced in Scotland, and should mark the beginning of an industry which will, undoubtedly, in time rank with other industries which have upheld Scotland's fame. The new firm makes two types of machines, the monoplane and the biplane, both built on well tried and tested lines. A flying ground has been acquired at Barrood, which is only 5½ miles from Glasgow, and things are now ready for pupils to start work. The course of training will be both theoretical and practical, and will include instruction in design and construction, as well as the repair and overhauling of aeroplane motors. A fixed "teacher," working on similar ideas to the Billing "Oscillator," will be used in the early stages.

### The Aviator's Storehouse.

A new and very well produced catalogue is to hand from A. V. Roe & Co., a firm which has adopted as its sub-title the phrase "The Aviator's Storehouse." A special feature of this list is a regular telegraphic code specially evolved for aviation purposes, which should be of considerable use to aviators who want stuff in a hurry. The list includes, as well as the ordinary parts more or less common to all machines, the "Avro" propellers, which have proved very efficient in the Roe triplanes, and more recently on the highly successful Roe biplane. Practically everything in the list has a telegraphic code word attached, so that quotations can be procured or goods delivered at the very shortest notice.

The firm also sends a weekly list of second-hand aeroplanes and engines, which is well worth attention, because it includes so many machines which, at the price, would make excellent bargains for experimental purposes.

### Mr. Willows' Latest Activities.

Mr. E. T. Willows, who is now E. T. Willows, Ltd., of Birmingham, has been hard at work recently on balloon work of various kinds. It may be recollected that the great feature of the Willows dirigible is that, owing to the way in which the angle of the propellers can be varied, the machine can ascend vertically with very great rapidity without losing ballast, and can descend without losing gas, which obviously gives it practical value for defensive purposes which no other dirigible possesses in the same degree.

Mr. Willows' old London-Paris dirigible, the *City of Cardiff* has just been treated to a coat of varnish, and is to be kept at Dunstall Park, Wolverhampton, for a time, making flights round the district. A new dirigible of 15,000 cubic ft. capacity is well in hand, but is not expected out for another six weeks. Mr. Willows is also engaged on making a 1,500 cubic ft. spherical balloon, which he hopes to have finished in a couple of weeks. He has also just finished a captive pilot balloon designed to ascend to a height of 5,000 ft., carrying pennants at every 500 cubic ft. on its cable to indicate changes in wind direction and velocity. E. T. Willows, Ltd., it should be noted, are laying themselves out to take on aeronautical work of all descriptions as well as that connected with balloons.

### The Hendon Accident.

It is satisfactory to note that the Coroner's jury which investigated the death of poor Mr. B. G. Benson has been satisfied that no blame attaches to anyone except the unfortunate victim himself. The accident happened so late in the evening that there were very few people on the ground, and consequently it is rather difficult to assign the cause of the accident with any real certainty, but it is sure that Mr. Benson had taken his machine up to a height of 200 ft., when his experience would certainly not warrant him going to a greater height than 30 or 40 ft.

So far as one can gather from the few who were there it would appear that the pilot, after bringing his machine down from 200 ft. in a very irregular way, suddenly heeled violently to the left, corrected her to the right, then over-corrected her to the left again, and came down with his engine running all out in a spiral dive.

This may be accounted for by the fact that if a machine heels violently to one side, say to the left, a novice often warps his left wing, or pulls down his left aileron to the utmost in an endeavour to lift that wing. The excessive warp may, however, act as a drag on that side, so causing the wing to swing round suddenly and acquire extra lift owing to its increased speed, with the result that the tilt becomes worse, and the machine slides bodily sideways.

The proper remedy for such a position is to ease off the warp somewhat and to steer with the rudder away from the lower side as hard as possible, with the idea of slowing down the right wing and increasing the speed of the left. At the same time it is advisable to dive so as to keep as much way as possible on the machine, and make the action of the controls quicker. Almost every learner has this experience at one time or another, but it generally occurs so close to the ground that the machine comes down without doing any damage, or at most damaging a wing tip.

A very important point in connection with poor Benson's death must not be missed. His physician, in an interview with the representatives of two leading daily papers, admitted that the victim suffered from heart trouble. It appears that his heart only weighed 9 ozs., whereas in a man of even less physique it should weigh at least 12 ozs. It seems probable, therefore, that the sudden descent from 200 feet to about 40 feet at top speed may have affected his heart, much as the sudden drop of a lift affects one, and that the shock of the smash, coming on top of this, finally put his heart out of action. The idea mentioned in some papers that the rarefaction of the atmosphere at high altitudes had anything to do with his death hardly seems worthy of consideration, for the difference in pressure at 200 ft. is hardly indicated by the most sensitive barometers, and certainly is not felt by human beings. If it had been 2,000 ft., there might certainly have been something in the idea. At any rate, it seems that the direct cause of death was heart failure, and not any direct breakage.

Mr. Benson's funeral took place at Brookwood Cemetery on May 31st, the Royal Aero Club being officially represented by S. T. Medlicott.

### Lanark School of Flying.

This School was opened on Saturday, May 13th, deputations from the Scottish Aeronautical Society, the Provost and Council of Lanark, and other notabilities attending the opening. The aerodrome is that used for the successful Scottish meeting last year. Mr. W. H. Even has been flying almost daily since the opening, and has made several good cross-country flights. Several pupils have already joined the School, which is likely to do much to popularise aviation in Scotland.

### The Sanders' Biplane Type 2.

Captain Sanders has now completed his tests with the new single-screw type machine, and has been successful in making some excellent short flights, principally in the early morning from four to six o'clock, as his is a windy part of the world, and calms comparatively rare.

Captain Sanders was out most days last week, flying at a height of from 40 ft. to 60 ft. The machine, which shows unusual stability, averages a speed of 40 to 50 miles per hour.

A passenger seat is now being fixed to the machine, and Captain Sanders hopes to make some cross-country flights in the near future, both with and without passengers.

**L**ANARK AERODROME, Lanark, N.B.—Tuition by  
Certificated Aviator on genuine Blériot Monoplanes;  
Passenger Flights and Flight Exhibitions.—Terms  
on application to W. H. EWEN.

## AEROPLANE MATERIALS.

### PETROL MOTORS.

Wire-Strainers, Wheels, Eyebolts and, all Accessories,  
both Model and Full Size.

Illustrated Catalogue, 4d.

**S. SUMMERFIELD, AERONAUTICAL ENGINEER.**  
**MELTON MOWBRAY.**

# CLIFT'S AVIATION MAPS.

**A Necessity to Cross Country  
Fliers.**

Prices (according to country covered) on  
application to

Eric Clift, c/o 'The Aeroplane,' 166, Piccadilly, W.

### Good Progress at Filey.

The Blackburn Aeroplane School at Filey seems to be making excellent progress. Mr. Blackburn himself and Mr. Weiss have been doing good solid work for the past month, and Mr. Weiss, who has had a good deal of practice lately, gives promise of being a first-class pilot. Mr. Hubert Oxley, who took his certificate recently at Brooklands on the Hanriot belonging to the Fisher School of Aviation, has joined the Blackburn School, and has already made a number of really fine flights. Mr. Blackburn had rather an adventurous finish to a short flight on May 28th, when he was carried by a side wind into the sea, and had to be towed out. Mr. Hucks is rapidly recovering from his recent accident, and hopes to be flying in the course of a week or so.

Mr. Hucks may find some consolation for his injuries in the fact that after the conclusion of his flights for his Pilot's Certificate he was presented with a silver model of a propeller by Mr. S. A. Hirst, President of the Yorkshire Aero Club, to commemorate the fact that he was the first aviator to win his Certificate in Yorkshire.

### Coming Events.

#### AEROPLANE COMPETITIONS.

- June 10-11.—French Gordon-Bennett Eliminatories.  
 " 12-18.—Rome-Turin-Rome.  
 " 19-26.—Turin Meeting (500,000 fr.).  
 " 18-30.—European Circuit (437,000 fr.).  
 " 23-27.—Kiel-Berlin.  
 " 28.—Gordon-Bennett Race (Eastchurch).  
 July 1.—Berlin-Hanover-Berlin.  
 " 11.—Paris-Bordeaux (100,000 fr.).  
 " 14.—Roubaix Meeting.  
 " 22.—Start of Daily Mail "Circuit of Britain."  
 Aug. 5.—Finish of "Circuit of Britain."  
 " 5-21.—Circuit of Belgium.  
 " 13-15.—Marseilles-Algiers.  
 Oct. —.—French Military Competition (1,200,000 fr.).

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

The initial outlay and running  
expenses are cut in half by the

## "AVRO" BIPLANE

Britain's Most Successful Aeroplane.  
Complete with 30 h.p. Green engine.  
For Passenger—For Cross Country.

**£600**

Not only is the "Avro" cheaper  
than any other successful  
machine, but its low horse-  
power halves the running  
expenses.

### SMALL COMPACT MACHINE.

Two or three Avros can be  
housed in a shed which will  
only hold one of the ordinary  
Biplanes.

Everything Halved but Efficiency.

**A. V. ROE & Co.,**

The Aviators' Storehouse.

Brownfield Mills,

MANCHESTER.

Telegrams: "Triplane." Telephone: 688 Central.

$\frac{1}{2}$

$\frac{1}{2}$

### MODEL COMPETITIONS.

- June 14.—Kite and Model-Aeroplane Association "Model  
Engineer" Competition, Crystal Palace.  
 " 17.—Parkside Aero Club Model Competition, Harrow  
Road.  
 July 1.—Kite and Model-Aeroplane Association Steering Com-  
petition, Drapers' Company's Ground, Leyton.  
 " 5.—Kite and Model-Aeroplane Association Wakefield Cup,  
Crystal Palace.  
 " 11.—Kite and Model-Aeroplane Association Steering Com-  
petition, Crystal Palace.  
 Aug. 12.—Kite and Model-Aeroplane Association Gamage Cup,  
London Aviation Ground, North Ealing.  
 " 20.—Kite and Model-Aeroplane Association Longest Flight  
and Competition for Self-Launching Model, North  
Ealing.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AILERON, London.

Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any  
part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
	s.	d.			s.	d.	
3 months, post free	-	1	8	3 months, post free	-	2	9
6 " " "	-	3	3	6 " " "	-	5	6
12 " " "	-	6	6	12 " " "	-	11	0

Cheques and Post Office Orders should be made payable to The  
Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee  
only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE  
from local newspapers, each issue can be obtained direct by forwarding  
remittance as above.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

THURSDAY, JUNE 8th, 1911

No. 1.



Builders of the Celebrated

*"Bristol"*  
*Aeroplanes.*

As supplied to H.M. War Office  
:: and to the Russian Army ::

Sole Agents in Gt. Britain & the Colonies  
for the famous "GNOME" Engines

The Company's Flying Schools, at Salisbury Plain,  
Brooklands, and Eastchurch, are the finest in Gt. Britain

PERMANENT STAFF OF  
15 CERTIFICATED PILOTS.

Special Terms to Navy & Army Officers.

**The British & Colonial Aeroplane  
Company, Ltd.,**

Clare Street House :: :: BRISTOL

Telegrams—  
"Aviation, Bristol."

Telephones 2 P.O.  
74 National. 3074 National.



A Bristol Aeroplane over the Avon Gorge.



"THE AEROPLANE," JUNE 15, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY, ("Aero-Amateur")

1<sup>p</sup>  
WEEKLY

Vol. I.]

THURSDAY, JUNE 15th, 1911.

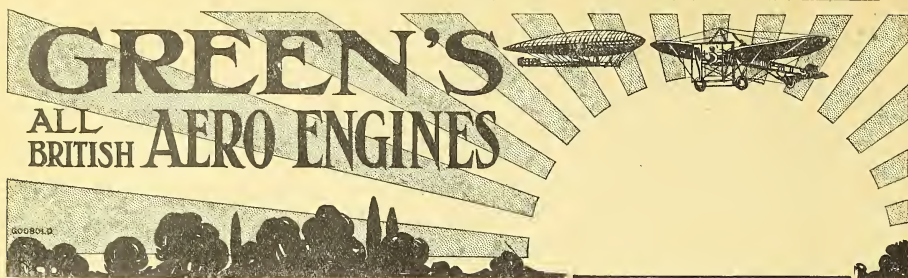
No. 2.

## A Good Start.



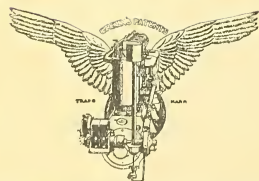
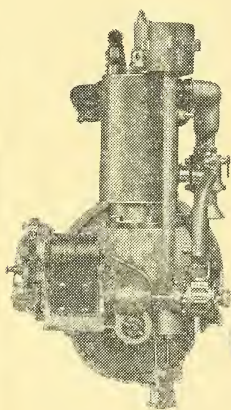
Lieutenant H. E. Watkins, on Jack Dare's Howard-Wright with E.N.V. engine, making a good start at Brooklands last week;

SMITHSONIAN OCT 28 1959  
INSTITUTION



## Famous for Reliability, Power, and Economy.

The Engine —



— And what it has done.

The following records were made with Green's Aero Engines. Achievements talk. Therefore this list proves that for **results** the Green Engine is unapproachable; and it's **ALL-BRITISH** too :—

All-British Record for Distance

All-British Record for Endurance

All-British Passenger-carrying Record

British Michelin Cup, 1909

British Michelin Cup, 1910

Longest Flight ever made in Great Britain

World's Record for 21-foot Boats

The only Competitor to complete the 24 hours' run in the "Patrick Alexander" Competition.

### The Green Engine Co.

Sole Licencees under Green's Motor Patents Syndicate, Ltd.,

55, BERNERS STREET, LONDON, W.

Makers for the Patentees :  
The Aster Engineering Co., Ltd.

Telephone—8765 Gerrard. Telegrams—"Airengine, London."

## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS ... ..	27	OUR AVIATORS—II. D. G. GILMOUR ... ..	36
BROOKLANDS-BRIGHTON AS AN AVIATION COURSE ... ..	31	THE WEEK'S WORK ... ..	40
"AIR CURRENTS" ... ..	32	MORE "PLAIN TALES" ... ..	42
SOME ASPECTS OF AUTOMATIC STABILITY ... ..	35	CODY AT BROOKLANDS ... ..	43
AERO-MODEL MAKING AS A SCHOOL HANDICRAFT ... ..	36	THE ROE BIPLANE ... ..	44
AVIATION MAPS ... ..	37	CORRESPONDENCE ... ..	45

## Editorial Opinions.

## The Aeronautical Society.

To write in moderate, or even parliamentary, language of the Council of the Aeronautical Society must be a hard task for any of the several aviation journalists who were present at the meeting of the society last Thursday. From 8 o'clock till close on 11.30 the gentlemen who are supposed to be doing their best to aid the progress of this, the oldest of all aeronautical societies in the world, did nothing but raise futile, but none the less effective, obstruction to the scheme of reform which the hard-working and able Committee of Investigation had prepared to submit to the meeting.

The obstruction took the form of quibbling on technicalities, the chief point being as to whether the meeting then assembled was a special general meeting or the adjourned general meeting. The discussion on this point alone occupied over an hour, and it quickly became evident to those interested that the one aim of the supporters of the Council was simply and solely to bring the meeting to a close without permitting the Committee of Investigation to present their report. For it was perfectly evident that the majority of those in the room were openly in favour of abolishing the Council *in toto*, and replacing it by a Committee composed of men who really know something about aviation, and who realise that, if the Aeronautical Society is to attain, and maintain, any status whatever as a scientific body, it must be controlled by those who have some qualification in the way of a knowledge of their subject; whereas it is only too painfully evident whenever almost any member of the existing Council opens his mouth to speak about flying, or flying machines, that his ignorance of the subject is only equalled by the obstinacy with which he clings to his position on the Council.

There are certainly some members of the Council who have seen flying, and it is said that some of them have actually sat in flying machines; but as for practical knowledge of the machines themselves, and as for theoretical knowledge as to how and why machines actually fly, there is a lamentable lack, taking the Council as a whole. That the fate

of such an old society should be controlled so ineptly is almost a tragedy, and it would seem that the best and cheapest thing for the members of the Society to do is to resign *en masse*, so leaving the Council without any society.

## A New Society.

Thereafter, the members will be well advised to join a new body altogether, composed of men who have some practical and scientific qualification; a body which might very well occupy the place in aviation that the Institute of Mechanical Engineers holds in mechanical engineering, or the Institute of Civil Engineers in civil engineering. Such a society was already in process of formation, but the more enlightened members of the Aeronautical Society realised that it would be better if the scientific men could be brought into the Society rather than that they should start a separate institution. It is to be feared, however, that so long as the present Council exists it will be unlikely that these very desirable men will become members.

It seems somehow that, owing to the fact of the Aeronautical Society not being a limited company, and the liabilities of the members, therefore, not being limited, it is impossible for any member to resign from the Society and so quit himself of any liability. And it seems that it is also impossible owing to the constitution of the Society for members to rise and depose the Council by vote, unless the Council is actually shamed into resigning, and so acceding to the wishes of the members.

After the exhibition of Thursday last the Council cannot be depended upon to bow to the will of mere members, and those unfortunate persons who are at present members of the Aeronautical Society are, it appears, absolutely in the hands of this Council, who are not only quite at liberty to affect the Society's financial state, as they have already done by their acquisition and administration of the mud-heaps at Dagenham, which they fondly imagined to be a flying ground, but are actually in a position inadvertently to run the Society into debt to any tune, and then shelve the legal liability for the debt

[N.B.—Owing to the Coronation *The Aeroplane* will be on sale on Wednesday next instead of on Thursday.]



on to any member who happens to have money enough to make it worth the creditors' while to exert it.

**A Matter of Bonafides.** Quite one of the most painful episodes during last Thursday's meeting took place when Mr. Berri-

man, the organising secretary of the Reform Party, wished to have it clearly stated, as part of a resolution, that his committee's report should go before the next meeting of the Society without reference to the Council. Those of the Council then present refused absolutely to permit such terms to be placed in the resolution, and denied flatly that any such understanding had been given at the previous adjourned meeting, though the writer and many other members are prepared to bear witness that such an undertaking was distinctly given from the Council's dais on that occasion.

Mr. Beecher, the honorary solicitor of the Society,

#### Comments on R. Ae. C. Doings.

The Aero Club seems to be waking up in the matter of cross-town flying, for Graham Gilmour has been warned against flying over towns on account of his flight over Salisbury, and certain flights reported to have been made over Liverpool by Mr. H. G. Melly have also been before the committee. It appears, however, that Mr. Melly's flights were misreported in the local paper, and that actually he was well round outside Liverpool all the time.

The Club is certainly making the best of a bad job as regards the Gordon-Bennett Race at Eastchurch. Members will naturally be admitted to the enclosures free, and their friends will be admitted for 5s. each. The Army and Navy Stores will erect large refreshment marquees, so that one will be fairly sure of something to eat. The South-Eastern and Chatham Railway will run special trains from Victoria on the morning of the race, and a special will return from Eastchurch after the dinner to the competitors after the finish.

After all, the course is to be quite a small one of only 6 kms. to the lap, which may make matters more convenient for the officials, but which certainly will not show the machines to their best advantage, for these very fast machines would do far better with a 10 or 20 kms. course with as few corners as possible.

The ordinary public will be accommodated on Standford Hill, which overlooks the flying grounds, and is the property of Lieut.-Colonel Sir George Hollford. The charge for admission will be is., and the Army and Navy Stores will supply refreshments there also.

who appeared chiefly as counsel for the defence for the Council, to do him justice, endeavoured to act fairly by both sides, and to preserve the amenities of debate. But despite his tact the earnestness of the Reform Party coming in contact with the obstinacy of the Council produced several distinctly unpleasant scenes. And to the unprejudiced observer it was fairly obvious that only the white hairs of the Council and their one or two supporters preserved them at times from some distinctly plain speaking. That such things should be at such a meeting is truly lamentable.

The proceedings must have been a revelation to anyone who had any lingering respect for the dignity of the Council of this Society, and it is sincerely to be hoped that at the next meeting the Council will see that their only course is to resign as gracefully as possible, and leave the management of the Society in the hands of younger and more competent men.

#### From One of the Wounded.

Writing from the Cottage Hospital, Frimley, Surrey, *apropos of The Aeroplane*, Lieut. H. M. Maitland says: "I wish you every success, and hope it will do very well indeed.

"I am still in plaster of Paris, and I was moved down to this Cottage Hospital last Saturday. In three weeks I hope to be able to get up, as I am bored to tears with holding down a mattress, but I think I must be allowed up in another fortnight, for that will make it three months, and this surely ought to be long enough. I am delighted to say my back and sides have quite recovered, and the water has gone from my knee.

"Good luck to your paper."

#### Another Resurrection.

It is good news to hear that Taddeoli, the Swiss aviator, who was "killed" at Lausanne on June 6th, is now making a steady recovery, and hopes to be flying again before long. Also the two Japanese "killed" last week are now doing well.

#### Tabuteau the Tourist.

Tabuteau, the Bristol pilot, being in France at Whitsuntide, took his wife as passenger, and his portmanteau, on his Bristol biplane, and flew off to Samois to spend the holidays with his wife's family, the flight taking an hour. He and his wife and his luggage returned by air to the Bristol hangar at Buc on June 6th. Madame Tabuteau is thus the first woman to have made a real aeroplane voyage.

It should not be long before regular cross-country tours become quite the "proper thing" for those who are lucky enough to be able to afford them.



A REAL "VOL PLANE."—Gordon England and a passenger on the "Military Bristol" landing with the engine stopped.



THE . . .  
**SANDERS**  
**Aeroplane Co.**

---

THE SANDERS  
**Aerial Cruiser**

Fitted with  
SANDERS PATENT AERIAL GUN  
For Naval and Military Purposes.

Designed for **Rough Weather**  
**Rough Usage**  
**Rough Landing**

---

Machines built to rise from or alight on water  
**Works & Flying Ground - BECCLES, SUFFOLK.**

*The*  
**UNIVERSAL  
AVIATION CO., LTD.**  
**166, PICCADILLY, W.**

**Aeroplanes.**

Can supply Aeroplanes of all types at short notice, and will construct to order machines of any kind.

*Standard Types—The*

**“BIRDLING” MONOPLANE,  
“BIRDLING” BIPLANE.**

**Tuition.**

Are prepared to undertake, on very reasonable terms, tuition in flying till certificate is obtained.

**Exhibition Flights.**

Have a staff of pilots prepared to undertake exhibition flights (Biplane or Monoplane) in any part of the country.

[Four Pilots were Flying for the U.A.C., Ltd., on Whit-Monday, at Pwllheli, Warwick, Stafford and Brooklands.]

**Tools, Accessories, etc.**

We are the sole Brooklands Agents and Factors for the following:—

PFEIL & CO.'s tools, wire, bolts, etc.

S. SMITH & SONS' Revolution Counters, Altitude Recorders, etc.

The ATLAS Non-puncturing Inner Case.

BOBBETT Tyre Lever.

UNIVERSAL “8 in 1” Combination Tool, etc., etc., etc.

*We are in the position to supply the above at the most favourable trade rates.*

## [Brooklands—Brighton as an Aviation Course.]

It is rather typical of the English as a nation that they should choose for their first aviation race—of any importance—a course whose difficulty is such that, to anyone but a skilled aviator, it is really dangerous. Even to the most skilled there is still danger, unless there be a good reserve of power in the machine. One might say that no one should attempt it who has not flown with a passenger on his machine.

This being so, it is distinctly a matter for congratulation that of the four starters in the recent race four should arrive safely—and Messrs. Roe and Pixton are especially to be praised, since the Avro is British built with a British engine.

A mental picture of the sectional elevation of the course will help to explain the difficulties. Firstly, on leaving Brooklands the ground rises steadily till the North Downs (700 feet) are reached, and since, as will be explained later, the machine should be at least 4,000 feet above the top of the range, the flight opens with the necessity for forcing the machine steadily up to about 5,000 feet—this merely as an incident in the race.

The reason for the extreme height suggested is the fact that the air between the Hog's Back and Leith Hill (1,000 feet) forms something in the nature of a death-trap. In a southerly or northerly breeze especially the moving air rolls down into the valley and acts like a blanket, after which, on reaching the opposing hillside, it breaks up into endless eddies.

Even if there be a dead calm, this part of the course is no safer, for, should there be any sunshine, an upward current of heated air rises more or less steadily rather north of the centre, about the line of the Dorking-Guildford road, while balancing currents rush down the hillsides and also from east and west.

That these conditions actually obtain I know from my own experience—I have lived in the neighbourhood over twenty years—and also from reports from various distinguished aviators—nearly every man, in fact, who has flown the course between the English Channel and the Thames Valley, Messrs. Gilmour, Hamel, Pixton, Snowden-Smith, and J. B. Moisant.

They have all complained of the buffeting they have received over the North Downs. As will be remembered, Mr. Moisant tried for a week to cross them, and only succeeded after a long series of smashes, while Mr. Hamel was on one occasion almost reduced to physical collapse by the pitching about, and on another had to dive from 5,000 to 1,000 feet,

engine all out, to get equilibrium after his left wing had been "hit underneath with a bolster," as he put it.

It only remains to add that between Dorking and Horsham there is scarcely a spot on which to land with safety (since nearly all the land is pasture, etc., with high hedges and large trees all round small fields), and it will be readily understood that the aviator, having safely got over this section of the course, sends up a little song of praise and thanksgiving to the makers of his machine and engine.

The Hand Cross range of hills (500 feet) makes much easier travelling, if a good height be obtained, for it is low, and the slopes are gradual. But on reaching the South Downs (800 feet) there are again difficulties.

Here there is not the narrow, deep valley which exists by Dorking, but, instead, there is the fact that owing to the neighbourhood of the sea there is always a breeze, and it is always more or less north or south. The result is, on one side of the Downs a strong upward draught, on the other a very mixed series of pockets, *remous* (i.e., eddies or whirlpools), etc. It was here that Mr. Pixton was blown down from 6,000 to 800 feet in the course of a few miles while flying from Shoreham to Hayward's Heath.

It will be seen from the instances I have given that these disturbances obtain to a much greater height than was expected. One used to believe that a height of 1,000 feet would avoid anything of the kind, but it seems as though at least 10,000 feet will be necessary if the pilot wants absolutely undisturbed air in all states of the wind.

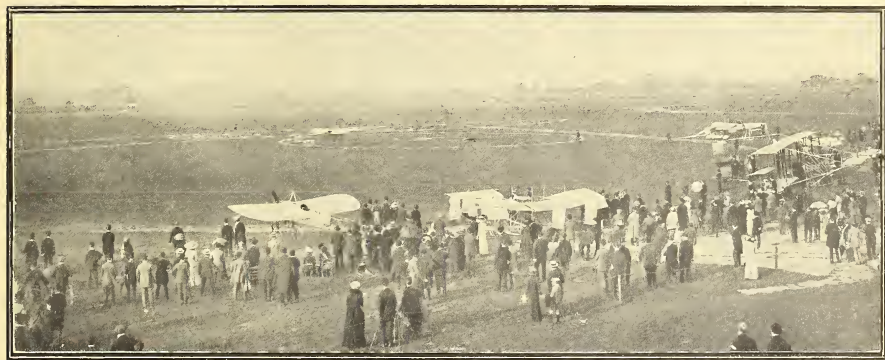
Several fliers have told me of their intention to avoid the difficulty by flying through the gaps or passes, such as Redhill, Dorking, and Shoreham. As a matter of fact, their last state would be worse than their first; for if there be extraordinary currents over the faces of the hills—which we know to exist—what will there be when matters are complicated by a gap a mile or two wide and 500 feet deep?

Taking it all in all, I must say that while Brooklands-Brighton is a nice distance, and an excellent course as regards publicity, it seems to me rather liable to strain both men and machines beyond the "elastic limit," and I am afraid there will be bad smashes anon. In any case, a race over it is worth considerably more than £80 for the first prize.—P.K.T.

## His Own Victim.

It now seems certain that Lieut. Bague has actually been lost at sea. As a matter of fact, one can have very little sympathy with him, for he had already had the experience of being saved by a miracle when he lost himself on the same journey

early in the year, and quite by accident found an extremely small island to land on. To make the attempt again, and deliberately to start without torpedo boats and without compass, was little short of suicide, and it is not surprising that there are rumours as to the aviator's intention to lose himself.



**THE HENDON AERODROME**—A hitherto unpublished photograph taken during the Parliamentary Demonstration. On the left is a racing Bleriot. Next is a Valkyrie, the white coats in front of it being the "guards" sent to prevent it from flying. On the right is Cody's big biplane. In the centre is a Bleriot, just landing, and beyond it marked out in chalk, is the deck of the Dreadnought, on which bombs were dropped.



## Air Currents.

A correspondent wishes to know whether the passenger at Brooklands who inadvertently put his head through a gilled-tube radiator recently has a partiality for "filled face."

The *Canard* Voisin is justifying its names, for not only has it managed to get off the ground and fly, but it has also flown off the water. Consequently, there is a stock joke sprung on every newcomer at Issy-les-Moulineaux, who is asked, "Have you heard of the *Canard*'s latest performance?" "No!" "Why it has laid an egg."

Incidentally, the name of the *Canard* was originally given to it somewhat on the principle of the old lady from the country who went to the Zoo with her husband. She wondered immensely at the elephant and hippopotamus, and one or two other quaint things, but when she came to the giraffe she looked it solemnly up and down, then turned to her husband and said, "James, I don't believe it."

A gentleman, who is regarded by his employers as an "expert," was looking at some pictures of foreign aeroplanes, and among them he was struck by two in particular—the Voisin "tail-first" *Canard*, and the Voisin school machine with a double set of controls, which the photographer had labelled "*Le Voisin à double direction*." "Ah! that's very interesting," he remarked; "a machine which flies in both directions deserves to be better known." And it took all his friend's persuasiveness to prevent him from writing to the papers about it.

Germany has got a new proverb. In France, to describe a short life poetically, they say "She has lived as live the roses." The practical German now says "He has lived as long as a Zeppelin."

It is reported that a gentleman named Gee has invented a new type of propeller. He is thus able to call it the "Gee-Whiz!" Some people are lucky.

## Etiquette for "Airmen."

Always be polite and kind when old ladies ask you how it is you can go up in those dangerous balloons.

It is now considered modish to light a cheroot before starting on a flight.

If asked to explain to a relative the internal workings of the motor on your machine, of which, perhaps, you may be ignorant, words such as "excruciator," "eradiator," and the like, used with discretion, may help you out of many a tight place.

Never, never, by sheer force of habit, give a false name and address to a reporter.

If, when flying, your machine should suddenly break in halves, do not stop to consider your position, but come down immediately.

It is not considered good form to allow your friends to cut their initials upon the propeller of your machine.

If you are in doubt as to the best poses to adopt when facing the camera, the following positions, which are very modish just now, and form an ideal set of three, may be strongly recommended:—

(a) Aeroplane being wheeled from shed. Yourself (in overalls) giving directions and pointing at machine with index finger of right hand.

(b) Yourself (now in pepper and salt breeches and bow tie) leaning against machine, legs slightly crossed, chatting easily to friends.

(c) After the flight. Signing autographs with stylo pen. Never preserve a churlish silence when flying with a passenger. Be bright and chatty, thus:—

(a) Is not that a fine view yonder, sir (or madam, as the case may be)? or

(b) How cool the air strikes one, does it not? or

(c) I fear the machine is out of my control. Pray do not be alarmed, sir (or madam, as the case may be).

(And so on.)

H. M. M.

Suggestions for the War Office (in view of the sudden outburst of mental activity shown in renaming the "Balloon Factory" the "Army Aircraft Factory," and with a patriotic desire to save our hard-working officials from brain fatigue)—To rename the "Air Battalion" the "Royal Airtillery." To give No. 2 Company the title of "The Air Company," and No. 1 Company at Headquarters "The Gas Company."

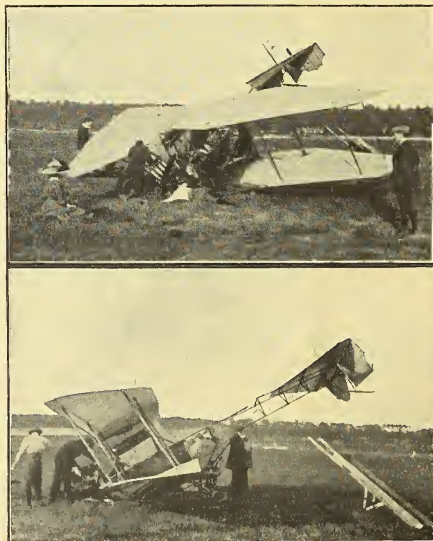
When Latham had his smash at Brooklands he fell on top of the Martin-Handasyde shed, and the whole front of the Antoinette came through the roof, engine and all. It so happened that Martin and Handasyde had an Antoinette engine on order, but they scarcely expected it to be delivered by Latham in person in this way.

A valued correspondent who is, in his spare time, a naval officer, writes concerning the Brooklands remous, of which he has personal experience:—

SIR,—I regret to have to draw your attention to an error in "*Air Currents*" re Brooklands remous: one "taxi" into the river remou to get pulled up. A well-known all-British biplane has been recently pulled down most successfully by the sewage farm remou.

*Apologies for the river remou*, did you hear of a certain model glider getting caught in it and being held aloft for some hours till fetched down by means of a ladder?

Conway-Jenkins' smash with a passenger in the Avro-biplane was described in one paper thus:—"Owing to the rising wind the aviator discontinued his flight." As a matter of fact, he was caught in an eddy and did a spiral dive from about 50 ft. or 60 ft. It speaks well for the machine and the principle of sitting behind the engine, that the passenger got off with a sprained ankle and Jenkins was unhurt. Below is a photograph of the results of "discontinuing a flight" in this way. The energy of the Avro School is shown by the fact that the machine was rebuilt and flying again in a week.



Two Studies of a Biplane, the Aviator having discontinued his flight.



# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz. :

35 h.p.	* 60 h.p.	100 h.p.
---------	-----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

Mr. Sopwith's recent record flight over Philadelphia, U.S.A.,  
was made with a 60-h.p. E.N.V.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESSEN, LONDON, N.W.

\*Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

## HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



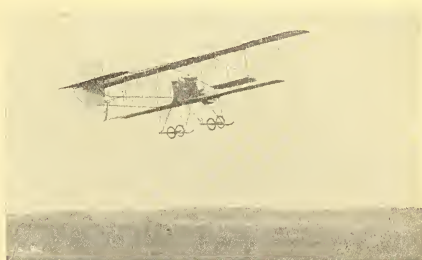
Eight Types

### Monoplanes

From 40 to 80 miles per hour.

### Biplanes

From 36 to 50 miles per hour.



Catalogue on Application.

Winner of De Forest Prize.

# THE NEW TYPE B VALKYRIE MONOPLANE

HAS NOW BEEN TESTED  
AND HAS PROVED AN UNQUALIFIED SUCCESS.

- ☞ Estimated speed 60/70 miles an hour.
- ☞ Still greater stability.
- ☞ Engine and Propeller behind.
- ☞ Valkyrie landing carriage.
- ☞ Carries a passenger.
- ☞ All-British in both design and manufacture.
- ☞ Guarantee: Any reasonable height; figures of 8;  
spiral vol planes; complete circuit with  
pilot's hands off controls.

THE machine for cross-country work and 1911 competitions.  
Especially designed for Military Service.

Orders now accepted. Finest Workmanship. Quick Deliveries.


TYPE A.

Single Seater; 45 Miles an Hour.

TYPE C.

Passenger-Carrier; 40, 50 Miles an Hour.

ALL THREE TYPES FLYING DAILY AT HENDON.

PASSENGER FLIGHTS  
FROM £2. 

EXHIBITION FLIGHTS.

## School of Flying.

Numerous School Machines.

Tuition Free to Purchasers.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

Full Information on Request.

THE AERONAUTICAL SYNDICATE, LTD.,

ESTABLISHED MARCH, 1909,

At the FLYING GROUND

(6 miles from the West End),

COLLINDALE AVENUE .∴ WEST HENDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## Some Aspects of Automatic Stability.

By W. O. MANNING.

Automatic stability is one of those subjects which, like the poor, are always with us, but there are some aspects of it which are generally overlooked by those whose acquaintance with aviation has largely been made on the theoretical side.

It is not by any means an absolute necessity. It may even be, as I will try and show later on, an unmitigated nuisance; and, although the perfect aeroplane of the future will undoubtedly possess it to a very large degree, it is no less certain that the pilot, by the aid of the controls, will have the power of overpowering and therefore destroying it.

The ordinary bicycle is not automatically stable laterally, but there are at least two methods by which it could be made so if desirable: one is by adding a third wheel and converting it into a tricycle, the other by adding a suitable gyroscopic mechanism. The first method has been employed on a large number of machines, but it is only necessary to call attention to the comparative rarity of this type of velocipede to show that the average cyclist does not consider the advantages of automatic stability of sufficient importance to warrant his taking the trouble to propel an additional wheel.

The gyroscopic method has not, I believe, been experimented with in a practical form, and, unless perhaps the bicycle is intended for the personal use of a performing bear, the experience of years shows that such a device is quite unnecessary.

In fact, the cyclist very much prefers to balance his machine by the exercise of his skill, and so automatic does this balancing become, that the cyclist, after a very short apprenticeship, is quite unconscious that his machine requires balancing at all, and this is what occurs with an aeroplane.

Of all the different types of aeroplanes which have been developed during the last year or so, there is probably not one which is really automatically stable, yet many of them are quite safe, practical, easily controlled vehicles of the air, vehicles which are, at least, as easy to drive as a bicycle, and by the aid of which one can set out on a journey with as much chance of arriving safely at that journey's end as one would have with a modern motor car.

### The Necessity for Control.

I do not, however, wish to imply that automatic stability is otherwise than highly advantageous, but the machine embodying it must be designed so as, at the same time, to leave the maximum control possible in the hands of the pilot.

It must be possible for the pilot, on emerging from, let us say, a cloud, to do a sudden dive in order to avoid another machine, which he has seen too late for any other tactics to be available, or to rise suddenly to avoid, say, a telegraph wire which, owing to his unfamiliarity with the ground from which he is rising, has suddenly forced itself upon his vision.

Sudden turns to right or left may also be absolutely necessary in certain eventualities, and it is, and probably always will be, absolutely impossible to give the pilot the control necessary for all these manoeuvres, and at the same time to prevent him misusing this control if his skill is insufficient.

In every kind of vehicle yet made by man much is dependent on the skill of the pilot and the reliability of the mechanism. In the case of a railway train, the bad judgment of a driver or the failure of the brakes may cause the deaths of many; in the case of a ship, a slip on the part of a helmsman or a faulty rudder may cause a vessel to overturn in a heavy sea, as probably happened in the case of the unfortunate *Waratah*; in the case of a motor car, the failure of the steering gear or taking a corner at too high a speed may cause a very serious accident. This last case, by the way, might possibly be absolutely prevented by taking away some of the control which the driver possesses over the car by reducing the steering lock; but I suppose no one who has ever driven a car would deny that the reduced control he would have over the steering would add far more dangers than it would remove.

### A Vision of the Future.

The aviator of the twenty-first century may possibly, after his morning's work is done, mount with his golf clubs to the roof of his office, and, after setting the dial of the automatic steering mechanism to the particular golf club he wishes to visit, composing himself comfortably in his seat, and, press-

ing the button to start the motor, be enabled to slumber peacefully until the machine reaches its destination, when the faithful mechanism may be imagined as whistling for a caddy, sending a waiter for a whisky and soda, and then waking its master at the last possible moment before these two arrive, by administering a series of gentle electric shocks.

But this Utopian vision belongs—if it belongs anywhere—to the future; and if the aeroplane designer, in the short time in which aeroplanes have existed as practical vehicles, has, in the elimination of human control, progressed no further than the shipbuilder with his thousands of years' experience behind him, the inherent difficulties of the problem afford a more than sufficient excuse.

### s for to-day.

An aeroplane when rising from the ground must necessarily be controlled by the pilot, as the vagaries of the air currents near the surface of the earth are often troublesome, and the machine cannot be permitted to heel over to the extent that would be permissible higher up; as, though the pilot may feel confident of her ability to right herself without his help, there is the risk that she may hit the ground before this happens.

When a machine has been manoeuvred to the height at which the pilot intends to fly, very little attention to the controls should be needed, except possibly an occasional touch of the rudder to keep her on her course, or to correct an unusually violent lateral rock.

If the motor stops, the aeroplane should automatically take her gliding angle without the help of the pilot, although his help will again be required when landing, and, of course, in selecting a suitable spot to land.

Such a machine as this, if fitted, as it should be, with the comforts of a modern motor car, is the most delightful form of vehicle yet designed by man. It eliminates that bugbear of the motor car, the tyre puncture or burst, it travels above the dust of the road and above the smoke of cities, and is the crowning achievement of our modern civilisation.

Such a machine can already be supplied by the aeroplane builders of to-day, and although in ability to withstand strong winds, in radius of action, in comfort, safety, and speed it will be completely surpassed by the machines of the future, yet it remains a thoroughly practical vehicle.



**NOTABILITIES AT BROOKLANDS.**—Left to right: Mrs. R. F. Scott (wife of the Antarctic explorer), the Hon. Mrs. Assheton Harbord, James Radley, Lady Blood (wife of General Sir Bindon Blood), Mr. Joseph (Assistant Secretary of the Royal Aero Club), and Mr. Petre. The three ladies are all keenly interested in aviation, and have all flown.



## Aero-model Construction as a School Handicraft.

By A. C. Horth (Chairman of the Aero-Models Association and Author of "Educational Woodwork," etc.).

The great value of the School Aero Club in promoting national interest in aeronautics is recognised by all those who have the future of aviation at heart, but it is to be regretted that very many school authorities throw such difficulties in the way that the formation of school clubs is only slowly progressing.

It may rightly be asked why this state of affairs exists, and if inquiries are made it will be found that the main reason is that an Aero-Model Club would probably interfere with cricket or football, and disorganise the school sports.

A very strong argument in favour of the School Aero Club has been made recently by Mr. Robert P. Grimmer, Secretary of the Arundel House School Aero Club, and the powers that be will have great difficulty in maintaining, in face of the strong case against them, their unbending opposition. There still remains, after the patriotic, sporting, and athletic aspects of the movement, still another and even more powerful argument in its favour, and that is its educational aspect.

We have something here that must overcome the most invincible opponent, for no true educationist can ignore the advantages of school handicraft, which now forms an integral part of ordinary school education.

In the great majority of secondary and public schools, woodwork or some other form of constructional handicraft is taken, and, even where there are no facilities for its practice, the principles are recognised, and no doubt before long every school will have its handicraft room.

The Board of Education attaches great importance to schemes of school handicraft, and has recently issued a circular to secondary schools calling attention to its value.

Handicraft should provide means by which exercise is given in the use of tools and the using of various materials; it should be associated, whenever possible, with drawing and design, and should promote inventiveness.

In what better way could the above essential features of handicraft be produced than in aero-model construction? What form of educational handicraft, woodwork, metal-work, wood-carving, fretwork, or cardboard-work contains more varied tool operations or materials? Where is there more scope for drawing and design? In what form of handicraft can the

principles of mechanics, physics, or mathematics be better applied, and also where are there greater possibilities for inventiveness and accuracy?

It would be a very difficult thing to find any form of constructive work more suitable for a school handicraft; it does not call for an expensive workshop equipment, the ordinary school woodwork room being quite suitable.

Woodworking forms an important part of aero-model construction, and the wood used is not limited to one kind. The metalwork, which is a necessary part of the work, is light in character, and, with the exception of a small steel vice and a few files, no great increase of tools is needed.

Practice is given in soldering, and this in itself is an extremely useful operation to learn. A copper soldering bit, the use of a gas-burner or bunsen burner, a roll of "Tinol" or a tin of "Fluxite" and ordinary solder is all that is necessary in the way of apparatus.

The use of a fabric for covering the planes gives useful practice in another material, so that, with wood, metal, and fabric, there is plenty of scope for manipulative work, all calling for considerable effort, and, in addition, when the fascinating nature of the work is also taken into account, no school authority could conscientiously refuse to sanction the formation of a club calculated not only to inculcate interest in a great and important movement, but also to give such valuable educational training.

Pioneer work is generally of great difficulty, no matter what it is, and anything that will move the British public from the state of apathy in which it now slumbers is to be welcomed. Can anything be better than interesting the young, who will to-morrow be all-powerful, and, according to the way in which they have been brought up, either make this country the mistress of the air or be content to allow it to fall into the status of a fifth-rate Power?

In the history of aviation the early pioneers were all British, the most important pioneer work has been done in this country, and gradually we are regaining the ground lost in the beginning of this century. Are we going to forge further ahead? If we are, we must support the Aero-Model Club, and most of all the School Aero Club.

## Prize-Winners at the Crystal Palace.



First :

C. F. Frogg-Smith.

Second :

C. Davies.

Third :

G. J. Rowlands.

## AVIATION MAPS.

Herewith is reproduced, on a reduced scale, a copy in black and white of a map which will be useful to aviators.

Mr. Eric Clift, the maker of the map, writes as follows:

"I enclose one of my maps for reproduction. Of course, it is not fair to judge a map, in which the colouring is most important, by its appearance in black and white, but your readers will be able to form some idea of its appearance.

"In the actual maps the colour scheme is as follows:—  
"Railways Red, Rivers Blue, Roads and Towns Yellow, Aerodromes Mauve, Hills over 400 ft. Brown, Prominent Objects Black, Woods Green.

"I have completed a set of maps, each starting from Brooklands as a centre to the sea in every direction.

"In addition to this, I am getting out a complete map of the course for the 'Circuit of Britain,' and also sets for various aerodromes (Salisbury, Hendon, Eastchurch), etc.

"I can produce and deliver, at a few hours' notice, a map of any special course desired, starting from any centre.

"The maps are to a scale of  $\frac{1}{2}$  in. to a mile, and are 9 in. wide, so that they cover a width of 18 miles of country. They also cover 6 miles beyond the starting and finishing points, so that if the point of arrival is missed there is still a margin.

"The maps are marked with compass lines radiating from the starting point, so that the correct magnetic bearing of any point can readily be found.

"I have designed for these maps a roller case, which shows the full width of the map and 10 in. of its length at a time, so that the aviator has 18 by 20 miles of country on the map.

"The course lies up the map, so that objects on the ground appear in the same positions as marked on the map. The case is pivoted at its centre; for the return journey it is swung round, so that the return course is now up the map.

"The map is kept as open as possible, with the idea that each aviator may fill in any special landmark which strikes him, and the following features are shown: All railways, large woods, hills over 400 ft. (heights are marked), lakes, some useful roads, large towns, and certain landmarks. The central line of the course is numbered at every fifth mile.

"The landmarks, of course, need very careful selection; they have been chosen from my own travels over the courses in balloons, aeroplanes, and motors, supplemented by information from others who have travelled in the same manner.

"The principal marks, for instance, which define the Brooklands-Brighton course are as follows:—

- 2 miles.—Over Wisley Lake.
- 8 " —Three miles right of Ranmore Church.
- 12 " —Between Leith Hill and Holmbury Windmill.
- 21 " —Two miles right of Horsham Town, and over Christ's Hospital.
- 25 " —Just to left of Knepp Lake.
- 30 " —One mile right of the River Adur.
- 32-35 " —Follow River Adur.
- 35 " —Just left of Lancing College.
- 36 " —Shoreham Aerodrome.

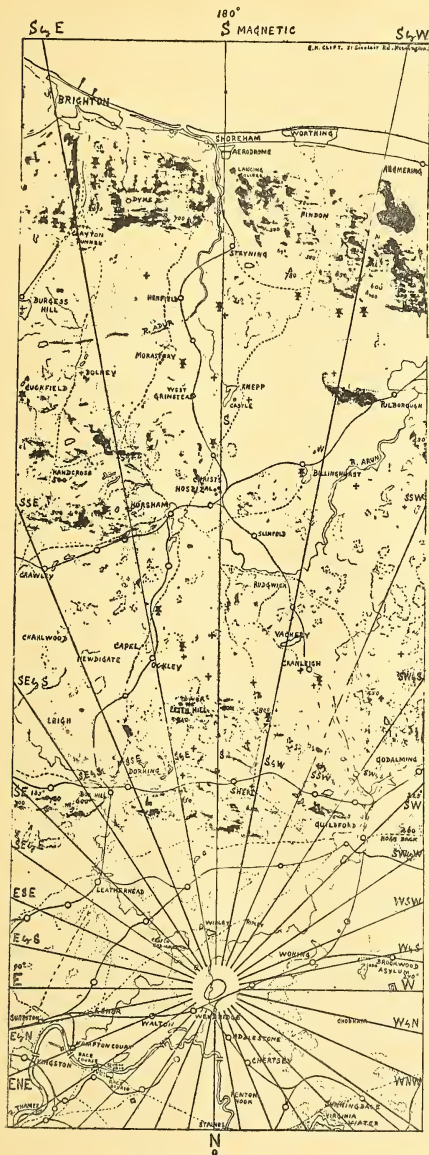
"When, as is often the case, the map shows two or more landmarks within sight at once, the matter is simpler still, since it is easier to recognise two marks than one, as their relative position is helpful."

Of course, to get the full advantage of the maps, a reliable compass must be carried. The bearings of a distant object can then be noted and the exact angle of approach obtained.

Mr. Clift is to be congratulated on his maps: the coloured ones, which the writer has examined closely, are most excellent.

There is one suggestion which one would like to make; though, of course, one appreciates the fact that Mr. Clift has probably been already overwhelmed with suggestions, most of which will diminish the admirable openness of the map. It would be a great advantage if the map could give some indication of the possibility of landing in any particular part of the country. This is a difficult proposition, but there is already a scheme afoot which may simplify matters enormously.

In the map shown the names read naturally when flying from North to South, and so would be unreadable on the return journey. In future maps this will be remedied by printing the names longitudinally, so that they can be read either way.



The aviators' route from Brooklands to Brighton.



## OUR AVIATORS. II.—Douglas Graham Gilmour.

In point of seniority as an aviator, Douglas Graham Gilmour is entitled to a place very near the head of any list of those who fly. Quite apart from that, the spectacularity of his flights has brought him very much into prominence, and taken purely on his merits as a clever flier he is worthy of a high place.

Gilmour was born in Dartford, in Kent, on March 7th, 1885. Dartford is hardly the place that one would expect to be the birthplace of an aviator, but his name would seem to indicate that Gilmour has a claim to Scottish ancestry. In fact, while at the Lanark meeting he mentioned to me that he claimed the bagpipe as his national weapon. As to his occupation prior to being an aviator, he was trained as an engineer, though he was lucky enough not to have to earn his living as such.

As an aviator he received his early training in France, and though his pilot's certificate, won at Pau, is only dated April 19th, 1910, and only bears the number 75 in the French list, he actually made his certificate flights a couple of months earlier. He should by rights be somewhere in the first twenty-five or thirty of the world's aviators, but owing to a mistake his certificate was not passed at the proper time.

His early flights and his certificate flights were made on an Anzani-Bleriot, which in itself shows him to be an aviator of considerable cleverness, especially as there were in those days no instructors to put one up to little wrinkles in the art of flying an underpowered machine.

After his return to England early in 1910 he fitted his old Bleriot with an eight-cylinder British engine, which pulled the machine along at a terrific pace so long as it was running, but poured forth oil so voluminously that Gilmour's machine became known, like the "Sunbeam" bicycle, as "the machine with the little oil bath." Since then he has flown machines of a variety of makes, including the Martin-Handasyde, Sommer, and more recently the Bristol. It is on this last machine that he has really made his name, though many of us knew him before to be a magnificent flier. Probably the most spectacular thing he has done was his flight over the Boat Race. His flight from Brooklands to Brighton brought him a large amount of publicity, but undoubtedly the finest of all his flights was that from Amesbury down into Dorsetshire, and up to Martock in Somerset, with his friend Gordon England as passenger, and for that reason a photograph taken during that flight appears as the main feature of the opposite page. Another very fine flight of his was from Brighton to Salisbury Plain only a few weeks ago.

On Saturday, June the 3rd, Graham Gilmour made another of the fine flights which go to make up his varied and exciting aviatoric career. Starting from Amesbury, on Salisbury Plain, at about 3 a.m., he flew across country, making for Brooklands, so as to be ready to fly there on Whit Monday. His mount was the nickel-plated Bristol military biplane which was shown at Olympia, and has turned out to be about the finest flier the Bristol firm have yet produced. In fact, but that her huge surface makes her somewhat slow, it would be hard to find as good a flier of the Farman type.

### The Brighton-Shoreham Aviation Ground.

It is probably by this time no news that the proprietors of the Shoreham Aerodrome are making a big bid for success in the aviation world. Certainly Shoreham is blessed with many natural advantages, as, for instance, a very large area, 1,000 acres in fact, a railway running alongside the ground, as at Brooklands, but with just the advantage that the Brooklands people would give their eyes for (nearly), viz., a "halt," or immature station, at the very entrance; and propinquity to a large town—a town in this case especially suitable, seeing that its summer population is eager for a show of any sort.

Brighton people, both collectively and individually, are gloriously keen on aviation. Individually, for Mr. Morison recently took up thirty-five passengers in two days; collectively, because the Brighton corporation recently informed Mr. Gilmour that at any time he wished to land on the lawns they would be delighted to tear up the fences for him; and to one who has seen how these lawns are cared for, this means much.

At the time of the Brooklands-Brighton race, the Shoreham Aerodrome suffered from the surface of a youthful hayfield, a

When Gilmour got to Basingstoke he ran into a thick fog and completely lost his way, so that he had to come down and wait for it to clear. When the fog cleared the wind got up, so he decided to wait for the evening calm. The wind dropped about sunset, and he started again, arriving at Brooklands just before 8 p.m. He was first noticed when some miles away at a height of over 2,000 feet, travelling very fast with the wind behind. He kept his height till right over the track, and then came down with a long, steep glide, keeping his engine just turning and no more.

After doing a full circle thus, he switched on again, and proceeded to do the most startling flying the writer has yet seen (outside of American alleged photographs). His right-hand banked-up turns were of a kind that were generally believed to be impossible on any machine of the Farman type, especially with a rotary motor. In fact, they were just as sharp and just as steeply banked as it would be possible to make them left-handed. And, in spite of the steepness, he did not seem to slip sideways in the least, nor did he let his tail drop. In fact, both in right- and left-hand turns he kept his fore and aft level perfectly. When he came down he was enthusiastically received by the regular Brooklands habitués, but practically all the Saturday visitors had left before he arrived, and so had missed a magnificent exhibition of what a machine can do.

Gilmour told the writer that he had only really learnt to fly since he went to Shoreham, for, having the sea to practice over, he was not afraid of falling, and so he tried tricks which it would be dangerous to practice over hard ground, though they were easy enough when once learnt.

Considerable amusement was caused by his touring kit when he landed, for he had a large suit case strapped on to the passenger's seat, and a straw hat tin-tacked on to the top of that. He himself was driving in an ordinary light overcoat and a weird Scottish "bonnet" with tails which fluttered wildly in the wind. The whole outfit was thoroughly Gilmour-esque, but, as a flier, he is not the same Gilmour who flew to Brighton a few weeks before; he is at least 50 per cent. better.

Personally Gilmour is a quaint mixture of genuine cleverness and happy irresponsibility, for his ideas on flying machines, their construction, and their handling are as sound as anything I have heard, and it is probably owing to the fact that he knows his machine so well that he is able to perform tricks with it which, if performed by most other aviators, would be sheer lunacy.

As a general rule, the man who is ready to give advice to all and sundry is looked upon with suspicion, and it speaks well for Gilmour's personal popularity that, though he has an unlimited stock of free advice for everybody on most subjects, everybody connected with aviation is always pleased to see him, and when he does a good flight, his rivals, the other aviators, are the most enthusiastic in their applause.

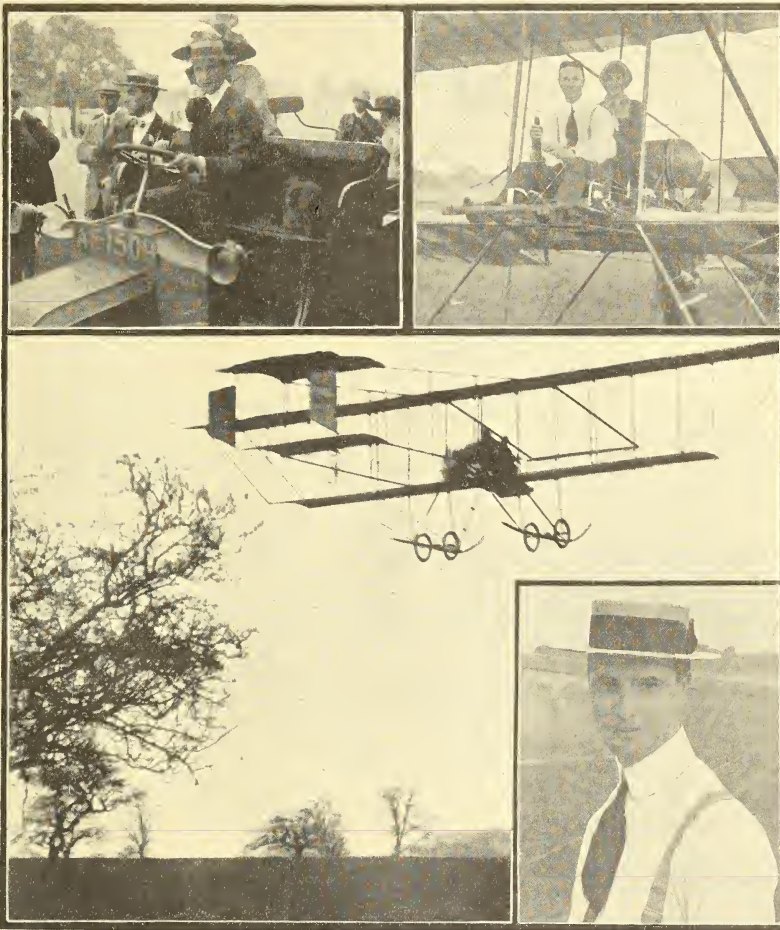
In spite of his apparent recklessness, he is a particularly safe flier, and, therefore, should be very well worth watching in any competition for which he and his Bristol machine may enter this year.—C.G.G.

paucity of hangars, and a huge free grand stand (in the form of a large embankment) just outside it. But things are being very much altered. There is now a space of about half a mile each way which is absolutely free from obstructions of any kind. The surface, now that the grass has been cut, reveals the road. Eight-foot corrugated iron fencing has been placed round two sides, the railway embankment covers the third, and the fourth is surrounded by private land. There are now twelve sheds.

After the great races the sheds are to be let to permanent tenants, for whom there will be many conveniences. A landing stage is to be constructed for sea-borne goods, and a club-house (with sleeping accommodation) and a swimming bath will be erected, both free to tenants.

The competitors in the European circuit should arrive on June 27th, on their way to London, and on June 29th on the return journey. It is possible to book seats at various prices, the lowest priced enclosure (no advance booking) costing 1s. For admission, though this is rather free from the sheds and station, P. K. T.



**OUR AVIATORS. II.—Douglas Graham Gilmour.**

1. As a motorist : On the Bristol "bus" at Brooklands.
2. As a passenger carrier : With a fair passenger.
3. As a tourist : With Gordon England on board, touring round Dorset and Somerset.
4. As himself : Ready for anything.

## The Week's Work.

## Monday, June 5th.

**SALISBURY PLAIN.**—At 4.17 a.m. operations were commenced, and several passenger flights took place. In the evening the machines were kept very busy, and several splendid flights took place. Messrs. Busted and Pepper made numerous flights, their landings and turnings being carried out in excellent style, the former doing figures of eight. Pupils at work include Messrs. Hotchkiss, Pepper, Brereton, Busted, Montefiore, Watt and Slater. As regards the passengers carried during the Whitson holidays were Mme. Grosseigne, Colonel Smeaton, Majors Kirkwood and Morland Greig, Captains Calmady and Kirkwood, and Lieut. Firebrake.

**BROOKLANDS AND HENDON.**—Reports appeared last week, but it is worthy of note that Grahame-White, Paterson, and Hubert took up thirty-four passengers during the holidays. Grahame-White took his mother and sister both together for a long flight across country at a height of 1,000 ft.

## Tuesday, June 6th.

**BROOKLANDS.**—Gordon England and Napier, on their Bristols, out in early morning. No other flying, owing to high wind.

**HENDON.**—Wind stopped all flying.

## Wednesday, June 7th.

No flying anywhere owing to wind.

## Thursday, June 8th.

**BROOKLANDS.**—Snowden-Smith, on the Blondeau biplane, the only one out.

**HENDON.**—Wind still very bad, but Wells and Turner both out on Valkyries in the morning. In the evening the designer was out trying some new adjustments on the Type B. military machine, and doing *volts plané* from 400 or 500 ft. Grahame-White and Paterson out on Farman. Mr. Dyott out for a few straight flights, while Slack, Metford, Capt. Hamilton and Lieut. Maunde Thompson indulged in some rolling practice on Blériots.

## Friday, June 9th.

**BROOKLANDS.**—Snowden-Smith again the only flier.

**HENDON.**—Wells and Perry doing straight flights, and Turner well up on Valkyries in early morning.

## Saturday, June 10th.

**BROOKLANDS.**—Pixton on the Bristol out in the early morning. Wind very bad all day, but in the afternoon Pixton came out on the Bristol, followed soon after by Raynham on the Roe School Farman. While Pixton was flying a car-load of Bristol pilots arrived on their way round the course for the "Circuit of Britain," studying the country. The party included Graham Gilmour, Gordon England, Collins Pizey, and Herbert Thomas, in charge of Mr. Farnall Thurston. They had started from Bristol, and had already been to Exeter, Salisbury, and Brighton. Pixton was signalled to come down, and, as soon as he did so, England took the machine up and did some very pretty flying. Then Pizey also did a short trip, and showed Brooklands how much he had learned on Salisbury Plain, for when he was last at Brooklands he could only do straight flights. He is now a fine flier, and his final *volts plané* in a tricky wind was really excellent. Soon afterwards the Bristol crew continued on their car journey, and Pixton went up again for the Aggregate Prize. Later on Watkins turned out the Howard Wright, and flew capably, his E.N.V. engine evidently improving with use, and with the fitting of a White and Poppe carburettor.

**HENDON.**—Mr. Dyott still improving and making turns in a very steady manner. Metford and Slack, Capt. Hamilton, and Lieut. Maunde Thompson did some rolling.

**EASTCHURCH.**—Prince Louis of Battenberg (accompanied by his daughter and lady in waiting) visited R.Ae.C. flying ground at Eastchurch for third time in ten days.

Lieuts. Samson, Gregory, and Longmore (R.N.), and Gerrard (R.M.L.I.) made several excellent flights on the two Short Farman, and the first named (Samson) took Miss Carr (lady in waiting) for a ½ hr. passenger trip. Later trips made over Sheerness, etc.

Dunne got out his monoplane, and after running it 100 yds. at apparently great speed on ground, flew about ½ mile at 8 ft. high, seemed to maintain stability all right, but too short flight to form real opinion of merits.

Wilbur Wright been there about a week or more, helping Ogilvie daily in preparing the Baby Wright—presumably in view of Gordon Bennett—extension being fitted to it.

Travers, who recently got brevet with Grahame-White, now at Eastchurch as assistant to Short Brothers.

Preparations for Gordon Bennett race being commenced.

## Sunday, June 11th.

**HENDON.**—Excellent flying by the Grahame-White School, in spite of a very dangerous wind, with eddies in all directions at once. Early in afternoon Grahame-White and Paterson both out in turn on the Farman, and getting badly shaken up. Later wind steadied, and Hamel took out the repaired "Boston Light" Blériot, going up to 4,000 ft., coming down with a terrifically fast *volts plané* with the wind behind, and landing beautifully head to wind without switching on his engine. Soon afterwards he took Captain M. Maitland up on the two-seater Blériot, and afterwards took up Miss da Costa, Miss Vera Francis, his sisters, Miss Magda and Dora Hamel, and Mrs. Elzacher, over 1,000 ft. Paterson and Hubert also took up several passengers.

**BROOKLANDS.**—Raynham taking passengers on the Avro-Farman, and Noel practising.

## Aviation in the Potteries.

Greswell's exhibition at Longton, Staffs, on Whit Monday, only resulted in a single flight, and that not a long one on account of the high wind, which made it almost impossible to fly from such a bad ground. However, the roughish crowd, which at first was inclined to jeer, was very well pleased, and gave him a hearty reception on his return. Mr. "Smith," of the Universal Aviation Co., Ltd., who arranged the flight, reported to *The Aeroplane* on his return from Longton, that there was another machine present, apparently the old Short biplane which once belonged to Mr. Moore-Brabazon. It did not fly, presumably owing to lack of a pilot, but it managed to hop a little. This seems a case where the Royal Aero Club might investigate the matter of an uncertificated pilot giving exhibitions. Greswell and Mr. "Smith" were too busy on their own affairs to acquire further particulars, but the matter should be followed up.

## Good Work at Liverpool.

The Liverpool Aviation School at Waterloo, which is run by Mr. Henry G. Melly, should before long obtain quite a good deal of support. At the present moment Mr. Melly has only one pupil, Mr. Dukinfield Jones, who is making considerable progress on the school Blériot. At the beginning of the month he was already able to make straight flights of three minutes' duration (think of flying in a straight line for three minutes, you who are used to aerodromes), and was planning down with considerable precision from 30 ft. or 40 ft. He has also made circular flights both to right and left. Mr. Melly, who also owns a two-seater Blériot, recently flew to Southport and back, taking with him Mr. Dukinfield Jones as passenger; and on May 30th he flew the whole way round Liverpool with Mr. A. T. Swaby as passenger, crossing the Mersey twice, and travelling the distance of thirty-five miles in forty-one minutes. On June 7th he made several good flights, among others taking his wife up to a height of 1,000 ft. on the two-seater.

On the 10th Mr. Melly gave a flying exhibition at the Liverpool Polo Club sports, flying over to the polo grounds in the morning and returning in the evening. During the afternoon Mr. Melly took up several passengers, including Mr. Reece and Mr. Dukinfield Jones. A large crowd greeted the aviator with enthusiasm.

## The Sorrows of the Exhibition Flier.

Mr. H. J. D. Astley's smash at Pwllheli on Whit-Monday is another example of the trouble attending any aviator who undertakes to fly more or less at the behest of speculative showmen. Although it was blowing half a gale all day, neither the promoters nor the crowd realised that it was dangerous to fly. Furthermore, in place of using the ground originally decided upon by the representative of the Universal Aviation Co., Mr. Astley was asked to start from a cycle track which itself was only three laps to the mile. There were houses behind him, and at the opposite end of the ground was a 10 ft. wall, with the wind blowing straight over the top of it.



However, Astley did his best, and got the machine off the ground, but when he got close to the wall the curl over of a 30 miles per hour wind hitting the wall just dropped him sufficiently for the lower part of the chassis to hit the top of the wall. As the machine flies about 60 miles per hour, the chassis was carried away, and with it the wing stays. The wings promptly shut up, and the machine dived straight on its nose to the other side of the wall. So bad was the dive, in fact, that the engine was pulled bodily out of the machine, and Astley found himself actually kneeling on the ground on top of the floor boards with the engine underneath him, though, fortunately, he himself was not hurt at all.

The callousness of the management may best be gauged by the fact that after the accident Mrs. Lloyd George was put on to present the prizes won during the sports, without anyone troubling themselves to find out whether the aviator was killed or merely injured. Be it said, however, to the credit of the crowd, which had previously been hurling insults at Astley, that when he returned after his smash he was given quite a rousing reception.

#### The Awakening of Warwickshire.

Gustav Hamel's flight at Warwick Castle on Whit-Monday was, as a matter of fact, considerably more risky than most of the spectators realised, and to anybody but a first-class aviator it would probably have ended in disaster. The ground, which sloped towards the river, was so situated that he had to start down hill and get off the ground between two grand stands, and if his engine had stopped soon after quitting the ground he would either have come down in the river or come down on the ground and ran along into the river. However, Hamel knows his engine better than most men, and, having full confidence in it, took his machine up very steeply, and got well clear of the river and surrounding trees.

He made a flight of twenty-five minutes, passing close to Leamington, circling round Warwick, and returning over the top of Warwick Castle, coming down from a height of 4,000 ft. with a straight *vol plané* which landed him exactly between the stands.

During his visit he was most hospitably entertained by the Earl and Countess of Warwick, and found that the large house-party at the Castle were all most keenly interested in aviation, which is evidently becoming quite the fashionable sport.

On his return to town Hamel paid a visit to *The Aeroplane*, and reported that the flight itself was free from trouble, except that while planing down over the Castle he was caught by one very awkward gust of wind, and for a moment or two thought he was going to land either on the Castle itself or in the river Avon which washes the walls. The flight was witnessed by something like 35,000 people, and it is interesting to hear that the Warwickshire Yeomanry, who organised the performance, drew so much money out of it that the regimental coffers are now unusually full.

#### Doings at Eastchurch.

A correspondent writes *apropos* of the work being done at Eastchurch: "Ogilvie was very busy getting ready his racer. Wilbur Wright was down there lending a hand. There was quite a lot of flying and various attempts to fly. Ogilvie was chiefly practising flying close to the ground, a very difficult matter with a course like that of Eastchurch, where the ground is so broken in many parts, compared with the billiard table at Brooklands. I was interested in an attempt he made to take a note out to some friends whom he wished to recall. They were on some broken ground, where there was a cottage, some hay ricks, and dykes, and though there were four men in the party, Mr. Ogilvie was cruising around for quite twenty minutes before he located them. He was flying quite low, and I think perhaps he would have located them better if he had been flying high, but I thought it was quite interesting that it should take so long to locate these men. Once found, the note was easily delivered; Mr. Ogilvie swooped close to the ground and dropped his note, which was picked up.

The Dunne machine was out, but could only do long hops, as obviously the engine was not tuned up enough. The indefatigable Mr. Jezi was hard at work. His machine seems to be all right, as at any time apparently he was fit to go out and fly once round, but after that there had to be a considerable interval during which the engine cooled down. The smoke trail from the engine is about equal to that of six big cars getting ready for a hill climb.

The naval machines were out flying well, their only trouble apparently being the right-hand turn, as when they made this at all sharply they had to bring the machine diving downwards several hundred feet.

#### Work at Beccles.

Miss Dorothy Howard writes: "Captain Sanders has not done much flying this week, as we have been fitting a new chain and sprocket, as well as a passenger seat.

"To-day (June 12th), however, we had the machine out and did some good flying—straight flights and half turns—at about 70 or 80 feet high, till, descending on a large bump, of which there are plenty on the ground, two wheels were bucked, which stopped operations *pro tem*.

"A few of the remarks we have made to us by various local enthusiasts are amusing. I am sorry I cannot convey the Suffolk accent, which makes them all so funnier.

"One dear old gentleman, after carefully examining the machine, wound up by asking, 'And does your engine work by machinery?'

"The machine is called about here either 'the Airship,' 'the Maryplane,' or the 'Biplane.'

"A local enthusiast arrived post-haste on a bicycle one afternoon, and after the usual question, 'Is it a biplane or an aeroplane?' went on to inquire what were the wire mattresses on each side of the engine. Our radiators do get called queer names, but still—

"A fair came to the town a short time ago, and the showmen came over to see the machine. One stolid, and solid, old showman gazed hard while it was being brought out of the shed, and got as close as possible while everything was put ready. Now our 'boy,' who has a head like the proverbial sieve, had, in spite of innumerable threats and orders, left a wood chisel on the plane. The old showman, who was now indulging in slightly scornful remarks on aeroplanes in general and ours, perhaps, in particular, was warned to move farther away while we started up the engine. But he wouldn't budge an inch, and seemed to think we were unnecessarily fussy and greatly over-estimating the powers of an aeroplane to do any damage.

"However, the propeller started—and the wood chisel started also. Luckily for the showman it came in halves, and the business ended harmlessly in the grass, but the handle made a bee-line for the middle button of his waistcoat and got a bull's-eye. The showman, when he recovered his breath, was slightly more inclined to think that the farther the safer for the spectator."

#### First-Fruits.

The Home Secretary issued on June 12th an order under the powers conferred upon him by the new Aerial Navigation Act in the following terms:—

I prohibit the navigation of aircraft of every description over the County of London on the twenty-second, twenty-third, and twenty-ninth days of June.

(The days of the Coronation and the Royal processions through North and South London.)

I prohibit the navigation of aircraft of every description over the County of London and over the urban districts of Penge and Beckenham on the thirtieth day of June.

(The day of the King's entertainment of school children at the Crystal Palace.)

I prohibit the navigation of aircraft of every description over Windsor Great Park on the third and fourth days of July.

(The days of the reviews of Officers' Training Corps and Boy Scouts by the King at Windsor.)

It is added that the penalty for contravention of the order is imprisonment for six months or a fine of £200, or both.

There is nothing particular to object to in the above order, for the County of London does not include either the Hendon or Brooklands aerodromes. However, it would be as well to define "navigation" more precisely, for if a balloon not under control is exempt (as it is under Section 3 of the Act), surely an aviator who goes up without a map or a compass can plead that he is not "navigating," as he has no means of telling his exact locality. Would not "driving" or "piloting" be a better word?

On the whole, the sport of aviation has escaped lightly from what might, with less enlightened and open-minded legislators in charge, have been a very awkward situation. As Lord Montagu said, it is as well to let the Government take the responsibility, but one cannot help thinking that had the Committee of the Royal Aero Club taken up a stronger position at the outset, by suspending the licences of a few aviators who persistently flew over dangerously thickly populated areas, all Government interference might have been avoided for some time to come.



## More "Plain" Tales.

The air battalion has been busy during the past week. Since their arrival the plain has taken on quite a different aspect, and at early morn and dewy eve (without the dew at present) a collection of machines may be seen in the air at the same time. Whatever the authorities in Whitehall may be doing, the men down here are taking aviation seriously.

Perhaps it is hardly fair to accuse the War Office of apathy, for they have had a phenomenal burst of energy lately. They have sent down another machine and got themselves another pilot. The machine is Capt. Maitland's old Howard-Wright, that Lieut. Watkins used to fly at Brooklands, and that has been reposing at the air craft factory at Farnborough for a considerable time.

In case it may not be recognised, it may be well to mention that the Balloon Factory has been rebaptised the Army Air-craft Factory—more energy.

The new pilot is Lieut. Connor, Royal Field Artillery. He learnt to fly on Mr. Cockburn's "Father of all Farman's," and took his certificate last February. Why he was not taken on long ago no one knows. He was an extremely promising flier, but has probably forgotten a good deal about it now for want of practice. It is understood that he is to fly the Howard-Wright machine; at any rate he is hard at work putting it together, and as it arrived in the most completely dissected condition possible, he is having plenty of work to do.

Capt. Fulton and Burke, and Lieuts. Barrington-Kennet, Reynolds, and Cammell, have all been flying busily, wandering away for fifteen or twenty miles across the plain. Capt. Burke does most of the passenger carrying; weighing only fifteen stone he naturally would. His Farman seems capable of carrying anything, including Capt. Burke, a 12½ stone passenger, and a full complement of petrol and oil.

By the way, Capt. Burke and his sergeant, Wilson, are very jealous of their machine. The sergeant refused admission to the shed to General Rawlinson—the O.C. here—a few days ago, much to the amusement of the latter.

Capt. Fulton has been letting Capt. Massy have some flights on his machine, till the latter's Renault-Bristol is ready, and Lieut. Connor has had a flight on Capt. Burke's machine.

On the 8th a distinctly fine performance was put up. Capt. Burke took his machine out about 6.30 and promptly disappeared over Beacon Hill (670 ft.). Ten minutes later Capt. Fulton was after him. Another ten minutes and Lieut. Barrington-Kennet was away, and a few minutes after seven Lieut. Cammell was giving chase. Without any fuss they had decided to go to Farnborough, and they did it. There was a north-east breeze blowing, and though it was not more than eight miles per hour at the sheds, it was clearly more than this higher up. In consequence they were compelled to fly at 200-300 ft. in order to get along and arrive before dark. Cammell with his 70-Gnome was able to take it higher, and flew at 500-600 ft.

The first three all took about one and a half hours to do the fifty miles, but the Bristol did it in little over an hour, and arrived right on the heels of Capt. Burke's Farman.

No. 2 Company has only been here three weeks, and we grieve to learn its members had had little previous practice.

## The New Cody Biplane.

Mr. S. F. Cody has definitely entered his new biplane for the *Daily Mail* "Circuit of Britain." He told the writer last week that his deposit had been paid, and that, should the machine come up to expectations, he will lodge the remaining £75 by the end of June. It is interesting to note that for the first time Mr. Cody is building a machine to suit an engine actually in his possession, for hitherto he has simply put the most powerful engine he could acquire into his existing machine, with the result that, though the machine is built for too h.p., he has never yet had more than 70 h.p. to drive it. The engine he has now got for the new machine is a 50-60-h.p. Green, a sister engine to the one with which he won the Michelin Cup last year.

The new machine resembles the famous "Flying Cathedral," but it is smaller, much stronger, and as much as 250 lbs. lighter. A humorist suggests that the big one should in future be known as "St. Peter's," and the smaller one as

If they are going to keep this sort of thing up and indulge in flock flights, they ought to be extremely efficient by the time manoeuvres come on. Lieut. Sebag-Montefiore has just taken his certificate. He decided to learn to fly during the time he was doing his artillery practice on Salisbury Plain. He just managed it. His leave was up on the 8th, and on the 8th he took his certificate. He caused a great deal of anxiety one day in the Bristol camp. Taking out the Bristol school machine for a practice spin one day, he went off to Devizes without saying anything. The Bristol school managers proceeded to scour the country in their car, certain that he had wrecked the machine. Meanwhile Montefiore returned comfortably to the sheds. The Bristol school staff were so overjoyed at the return of their machine that they actually forgot to congratulate him on his fine performance. Mr. Busted has also taken his certificate on a Bristol.

Burke and Cammell came back from Farnborough on the 10th, and arrived in the morning about the same time. Good wind behind them, but very steady. Cammell did the trip in 35 mins. (50 miles). Barrington-Kennet's engine went wrong at the start, and only got a mile. Fulton came on later, having waited for Barrington-Kennet to get going, and both arrived safely. To do the journey with all hands *once* might have been chance, but to get the fleet back again successfully shows that it is not mere good luck.

## Lancashire to Wales and Back.

On June 7th Mr. R. A. King, on his Farman, flew from Freshfield across the Mersey and over Hoylake golf links. Thence he flew across the Dee to Colwyn Bay, and landed there, fifty miles from his starting point. Later in the day he flew back again without incident. His average height throughout was about 1,500 ft. Mr. King has come on well as a flier recently, for so recently as the Waterloo Cup he was content to do most of his flying as a passenger. This Colwyn Bay and back flight really deserves far more attention than it has received from the Press generally, for the variations in temperature when flying over land, rivers, and sea at intervals are apt to set up currents which would worry the cleverest aviator.

## Bœuf à la Mode.

Mr. D. Urquhart, Secretary of the Dundee Aero Club, writes: "Unusually circumstances secured for our full-size glider which we assembled recently. We left it on our aerodrome at St. Fort last week in perfect order, and when we arrived we were startled to find a dead cow lying under the wings of the machine. The plane itself looked as if it had been attacked by a band of savages and perfectly ruined."

"After consulting with the owner of the beast, and holding an inquest on the body, expert evidence showed that the animal had eaten about 24 ft. of ash ribs, and a similar amount in square feet of canvas. Before feasting on this unusual diet it had charged the machine repeatedly, and moved it to yds. from where we had it tied. This, happening at the commencement of the season, has upset us considerably, more especially because we expected to figure this year in the light with something entirely original. I may say we have worked from the beginning, and endeavoured to advance the science of flight."

"St. Paul's." It has two independent elevators, of the distinctive Cody type, as in the older machine, but it differs in having two large rudders instead of a single one. This is a revival of the system used on the original "Army Aeroplane" four years ago. These rudders are placed 8 ft. apart, and 12 ft. behind the main planes. They are cruciform, to the extent that each carries a horizontal disc at its centre, the discs acting at once as struts from which to stay the rudders, and as horizontal dampers.

The control is of the usual Cody type, wherein the whole of the work is done by the wheel and the lever on which it is mounted, no foot control of any kind being used, except for an accelerator pedal similar to that on a car. Mr. Cody hopes, bar accidents, to have the machine out for trial by June 25th. On June 6th and 7th Mr. Cody, on his old machine, had the honour of making flights at Aldershot for the King. On one occasion he landed and came to rest within about twenty-five yards of the King himself. Afterwards the King inspected the machine closely, and showed considerable interest.

**S. F. Cody at Brooklands.**

In the centre is an impression of Mr. S. F. Cody, the winner of the British Michelin Cup, who made the longest flight on an All-British machine last year, the machine being of his own build, and fitted with a 60 h.p. Green engine. The small photographs, taken by Mr. W. O. Manning, show the Cody machine in four typical attitudes.

## The Roe Biplane.

Mr. A. V. Roe's biplane, or "VARO," as the name originally appeared in paint on the wings when viewed from below, will already be well known to readers of *The Aeroplane* because of the remarkable flights performed on it by Mr. Pixton, solo and with accompaniment, with an engine of 35 h.p.

One commences at once to examine the design to find why it flies so well. In this case it is improbable that the high efficiency is due to the plane section, which is not that usually regarded as being ideal, for it has several angular projections which must certainly cause eddies.

The remaining factors are: propeller, aspect ratio, and "stabilising losses." In two of these three the Roe machine is excellently designed; the aspect ratio is very high—1 to 6.2—and the stabilising losses are not great, because the dihedral angle is very small, and because the stabilising surfaces (which can never work with such efficiency as the main planes) in this machine do no work under normal conditions (i.e., the tail and empennage are actually non-lifting when the machine is in flight). The propeller is apparently very good, and certainly works well.

The constructional design of the machine is good. The dihedral angle is given by the outer sections of the planes, which are readily removable. The engine, pilot, and empennage are carried on a triangular fuselage, which is covered in from the nose to the pilot's seat. This fuselage is placed between the planes, so that the centre of gravity of the machine is comfortably high.

The engine is compactly fitted in the nose of this fuselage, its radiator behind and above it. The lubricating oil tank is quite small, and is attached to the engine, the petrol tank being between two of the plane-struts.

The passenger's seat is at the centre of gravity of the machine, between the two planes, so that variation in weight makes little difference, and the passenger has his body protected against wind by a cowl in front, so that only his head is exposed.

The pilot sits behind this, and, in flight, his face is, in side elevation, level with the rear plane-struts, so that he has a very good view of the country, both in front and vertically below, while at the same time he can see above and behind him. In front of him is the control wheel, which swings back and forwards to elevate, and is turned on its axis to warp the wings. The rudder is operated by two separate pedals, and the engine controls are arranged on the edge of the body. There are two switches, one to switch off permanently, while a spring switch on the control wheel enables the pilot to switch on and off while "planing," without removing his hand from the wheel. It is noteworthy that Mr. Roe has throughout fitted very powerful controls.

The landing chassis is a most excellently designed wheel-and-skid combination. Its effectiveness (and the strength of the whole machine) may be judged from the fact that when a pupil dived into the historic sewage farm only one strut and the propeller were broken, and the pupil was not thrown out. An even more astonishing fact is that another pupil took the machine into the river Wey; the skids were deep in the mud and the engine awash; the machine was towed out by a motor-car, and was found to be quite undamaged; in fact, ten minutes later Mr. Roe flew it back to the sheds! In this case, also, the pilot was not thrown out.

Although the machine is so strong it is quite light, weighing, in fact, somewhere about 500 lbs. without the pilot;

## The Horth Challenge Shield.

With a view to encouraging interest in aeronautics among the younger generation, and also the formation of school aero-model clubs, Mr. A. C. Horth, Chairman of the Aero-Models Association, has offered a shield for annual competition. The committee has framed a set of rules to govern the competition, which will be under the control of the Aero-Models Association.

The competition is for teams of five selected from each school, and the shield will be awarded for distance and duration only, the scoring being on the flights of the three best representatives of each team. Medals will also be given to the winning team. The machines must be constructed entirely by members of the competing clubs. Copies of the rules may be had on application to Caxton House, Westminster, S.W.



Pixton on the Avroplane flying over the time-keeper's box at Brooklands.

and it must be remembered that the machine flew to Brighton and back with Mr. Pixton, who weighs nearly 12 stone, as pilot, as well as flying at Brooklands with him and a passenger of over 14 stone on board. When one considers that the ordinary type of biplane has all its work cut out to carry such a load at 35 miles an hour with a 50 h.p. engine, and that the "Avroplane" flies at 45 miles an hour with a 35 h.p. engine, one gets some idea of how efficient the machine really is.

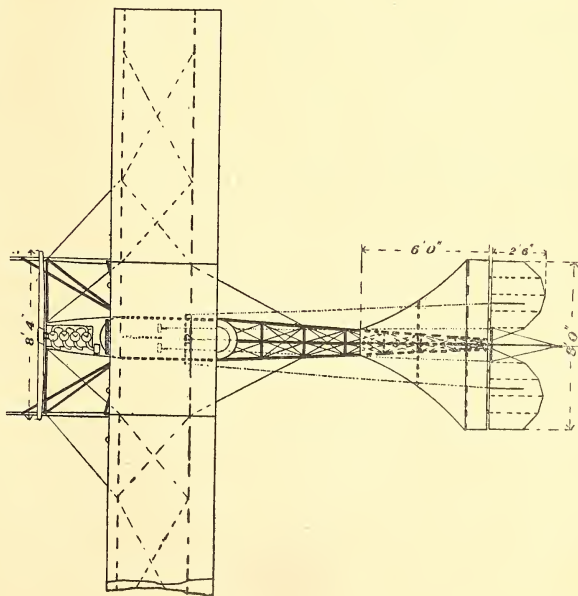
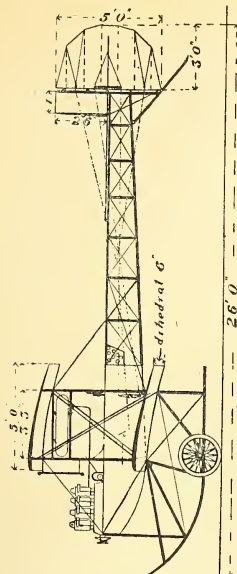
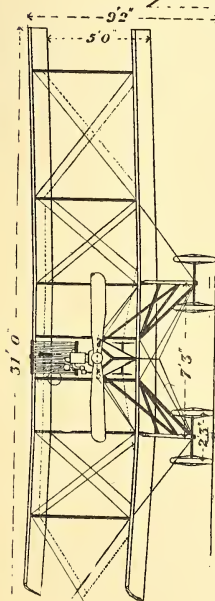
The writer wishes here to acknowledge the courtesy of Mr. A. V. Roe in permitting him to collect the data which appears in concrete form in the accompanying scale drawing.

## Activity in Yorkshire.

Mr. J. Bertram Sykes, of the Yorkshire Aero Club, writes us that during the current week the new two-seater Blackburn monoplane will be at work at Filey equipped with a 50-h.p. Gnome. Messrs. Weiss, Blackburn and Oxley are doing good work, and it is hoped shortly to have four new machines flying, which will specialise on cross-country flights from Filey, for which local prizes are being offered.

Aviation is being taken up with much enthusiasm in Yorkshire, and the Yorkshire Aero Club is going particularly strong. An excellent programme is being prepared for the autumn and winter. The membership is increasing nicely, and it is hoped that there will soon be from half a dozen to a dozen qualified pilots among the members.





## ROE BIPLANE

Surface of Main Planes	310 sq. ft.
Empennage	31
Elevators	14
Rudder	11
Fin	2½
Engine	30 Green, 1100 r.p.m.
Propeller	Aero, 8'4" diam. X 3'6" pitch.
Speed of Flight	45-50 m.p.h.

## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

## Aeroplanes and Insects.

SIR,—I have for the last two or three years, like many others at the present time, been studying the subject of aviation, and the result of my experiments may, perhaps, be of interest to the readers of this journal. I never flew in an aeroplane, never even saw a full-size machine, but it seems to me that one may learn a good deal about aviation in a small room with a paper model and a gas jet.

I have proved, to my own satisfaction at least, that the aeroplanes of the present day are either kites or insects. It is well known that kites fly by being pulled against the wind by means of a string. On this principle, I believe, the biplanes with propeller behind are constructed. The propeller, being of low pitch and rotated comparatively slowly, drives the air backward, and thus imparts a forward motion to the machine, which is held on an even keel by an elevating plane or planes fixed to poles projecting in front. The elevator thus plays the part of a kite, which, as it were, drags the machine behind it, and may be assisted in its work by a tail projecting behind. The planes merely play the part of a supporting surface.

On the other hand, I would say that the monoplanes fly on the same principle as insects. The insect, such as the house-fly or bee, by the rapid vibration of its wings, creates round the fore part of its body a partial vacuum into which the hinder part of its body is driven by the pressure of the air behind. Now, if we increase the speed and the pitch of a propeller or tractor, it will throw the air off at the ends of the blades, and in this way a partial vacuum is formed in front of the monoplane, into which the machine and the aviator's body are driven by the pressure of the air behind. This explains the success of the machines which have the front part of the fuselage covered in with canvas. The rarefied air in front and above the machine causes the denser air behind to support and drive it forward. But it seems to me that the efficiency of the monoplane would be much increased by making the diameter of the body greater and closing it in at the hinder end. The pitch of the propeller might also be increased with advantage.

There has lately appeared elsewhere a paper by Mr. Dring on the flight of insects. He says that the wings of the insect rotate like the oar of a boat, but one is obliged to take this piece of information with a considerable grain of salt. This, he says, is the reason why some insects can hover stationary for a few seconds, and then dart away suddenly several feet. But I believe the humming bird can do the same thing, and no one surely would assert that its wings rotate. It seems to me to amount simply to this, that the wings of the insect throw the air upwards and downwards, whereas the wings of a bird throw the air downward and backward. In short, insects are supported by the action of the air on their bodies, while birds are supported by the action of their wings on the air. The insect when it wants to hover probably throws the air off at the ends of its wings, which are held straight out, or inclined forward, and the uprush of air from below supports its body. When it wants to dart forward it simply alters the angle of its wings in relation to its body, and the thing is done to the envy and astonishment of the clumsy aviator.

A. ALLEN.

[See note at head of this column.—EDITOR.]

## Popular Knowledge.

SIR,—The following little incident, which occurred here a few weeks ago, shows, I think, the great amount of knowledge about aeroplanes which many people possess. In my spare time I do a fair amount of model building, and have had reasonable success with models rising from the ground of their own power. A certain lady visitor, having heard of this, desired to see one of the models. I produced one she said, trim, and she inspected it. Pointing to the elastic she said, "And what's this for?" I explained, "Oh!" she said, "and do they drive real aeroplanes with elastic?" This is perfectly true.

Another time a working man who dropped into my workshop was very surprised to see the machines. "Do they fly?" he asked. I said they did. "And how do you get them to come

down when they have finished flying?" he said. I told him they managed it without my persuasion.

Sydenham.

LANCELOT L. VIGERS.

[Such questions, at any rate, show interest, and readers can do much good by taking the trouble to explain matters. Ed.]

## A few Opinions on "The Aeroplane."

The Aeronautical Syndicate, Ltd.—"Many congratulations. I am sure The Aeroplane will prove a big success."

The British and Colonial Aeroplane Co., Ltd.—"The Aeroplane seems quite interesting and useful."

The E.N.V. Syndicate, Ltd.—"The Aeroplane appears to be a very interesting paper, and we wish you every success in your enterprise."

Leo. Harris, Esq., Midland Aero Club—"Hearty congratulations on the issue of the first number of The Aeroplane. May it prosper exceedingly."

Ernest Warde-Fox, Esq.—"The advent of The Aeroplane should be a welcome one. I find it a delightfully interesting publication. The free and open comments, together with the many hints of real value, both to the novice and the finished aviator, go to make up a most congenial and collective aviation weekly. Accept my congratulations on having produced a journal which on its merits alone must be an immediate success."

J. L. Luntley (Paris).—"All success to The Aeroplane. I feel most confident in its description. The paper for practical men."

Gilbert Dennison, Esq., of E. T. Willows, Ltd.—"Mr. Willows and myself are unanimous in our opinions that the matter and general tone of the paper cannot be improved on."

W. Wentker, Esq.—"Allow me to congratulate you on your new paper."

R. P. Grimmer, Esq. (Hon. Secretary the Federation of School Aero Clubs).—"Congratulations on The Aeroplane, which is really splendid."

Mr. A. C. Horth (Chairman of the Aero-Models Association).—"Heartiest congratulations on The Aeroplane. It does you credit, and I hope it will turn out a great success."

Mr. W. H. Akehurst (Hon. Secretary of the Kite and Model Aeroplane Association).—"I am very pleased with your new paper, and wish you every success."

Captain J. D. B. Fulton (Commanding No. 2 Company the Air Battalion).—"It is practical in its views and thorough in its opinions; in fact, just what is wanted by the men who do the flying."

L. Jessi, Esq. (Certificated Pilot).—"I shall not fail to recommend it to my friends. I hope it will turn out trumps; there is room for a good weekly."

J. G. Beckett, Esq.—"I must congratulate you on it, and trust it will be the success it deserves."

Walter G. Duncan, Esq. (the Scottish Aviation Co., late Secretary the Scottish Aeronautical Society).—"I must highly congratulate you on the result, your opening copy being all that could be desired."

## An Inter-club Models Championship.

The Aero-Models Association has prepared a scheme for a series of inter-club model competitions, full particulars of which can be obtained from Mr. A. B. E. Cheeseman, Caxton House, Westminster, S.W. There will be one class of competition only—namely, for models propelled by elastic or spring energy, and having a surface of more than 1 sq. ft. but less than 2 sq. ft. A silver cup and other trophies will be purchased out of the donations and entrance fees of competing clubs. Clubs will be represented by teams of three, and entrance must be sent in not later than July 1st. Competing machines must be constructed by members of the competing clubs. The competitions will be divided into rounds, according to the number of competitors, and the meetings will be arranged in accordance with the procedure of playing off competitions in connection with the English Football Cup ties. It is to be hoped that model clubs will support the scheme.

## The Rome Meeting a Failure.

Mr. T. S. Harvey, the Italian correspondent of The Aeroplane, writing from Rome, says: "The grand meeting of Rome, though excellent flying has been done, attracted no attention. The Press is at loggerheads with the promoters, so no reports are to be found in the Italian papers. An Albatross monoplane is the most interesting feature. I fear that the last stage of the flight from Rome to Turin will fall through."

**L**ANARK AERODROME, Lanark, N.B.—Tuition by Certified Aviator on genuine Blériot Monoplanes; Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

### AEROPLANE MATERIALS.

#### PETROL MOTORS.

Wire-Strainers, Wheels, Eyebolts and all Accessories, both Model and Full Size.

Illustrated Catalogue, 4d.

**S. SUMMERFIELD, AERONAUTICAL ENGINEER.**  
**MELTON MOWBRAY.**

**Q**UITE NEW, 25 H.P. 8-cylinder Monoplane for sale cheap. Cost over £1,000 and has been thoroughly tested. Beautifully constructed. **GRATZE, LIMITED,** 44/46, Whitfield Street, London, W.

**A** RESPONSIBLE position is vacant in an old-established firm of Aeronautical Engineers with flying grounds, machines, and several valuable patents. Salary, £200 to £300 per annum, according to investment. Strictest investigations. Solicitor's or Banker's reference required.—Write **MALLOWS & Co., ADELPHI HOUSE, STRAND, W.C.**

**50** H.P. ALVASTON for sale, perfect condition, fresh from makers; replacing by more powerful type; price £95.—**MALLOWS & Co., ADELPHI HOUSE, 71/72, STRAND, LONDON, W.C.**

### CLIFF'S AVIATION MAPS.

#### A Necessity to Cross Country Fliers.

Prices (according to country covered) on application to Eric Cliff, c/o "The Aeroplane," 166, Piccadilly, W.

#### A New Wire Strainer.

It is satisfactory to see that another of the well-established firms of toolmakers have had the foresight to perceive in aviation the embryo of a great industry. Messrs. Pfeil and Co., of 147-157, St. John Street, Clerkenwell, besides supplying the usual aero fittings, have already on the market some specialities of their own. The most striking of these is the Watts patent all-steel self-locking wire-strainer, which has a weight only 80 per cent. of that of the usual design, and has a strength more than twice as great. In this strainer, by the use of a swivel, one screw is abolished, which gets over the difficulty in making the right and left hand screws to screw up equally.

They also stock various types of steel tube, bar, strip, etc., making a special feature of Retort Manganese Steel. Any ordinary mild steel may be called Manganese steel, but Retort steel is another matter. Steel tension wire of great ductility, and yet of great tensional strength, is another speciality. A new eyeleted tension plate is worth attention, and some excellent instruments and tools are also listed.

#### Coming Events.

#### AEROPLANE COMPETITIONS.

- June 18-30.—European Circuit (437,000 fr.).  
 „ 27.—European Circuit competitors at Shoreham.  
 „ 28.—The competitors at Hendon.  
 „ 29.—Return to Shoreham.  
 „ 23-27.—Kiel-Berlin.  
 July 1.—Gordon-Bennett Race (Eastchurch).  
 „ 1.—Berlin-Hanover-Berlin.  
 „ 14.—Roubaix Meeting.  
 „ 22.—Start of *Daily Mail* "Circuit of Britain."  
 „ —St. Petersburg-Moscow.  
 Aug. 5.—Finish of "Circuit of Britain."  
 „ 5-21.—Circuit of Belgium.  
 „ 13-15.—Marseilles-Algiers.  
 Sept. —Paris-Bordeaux-Paris.  
 Oct. —French Military Competition (1,200,000 fr.).  
 „ 31.—Last day for British Michelin Cup Flights.  
 Nov. —Aero Exhibition, Paris.  
 Dec. 8-25.—Paris Aero Show.

1/2

1/2

1/2

The initial outlay and running expenses are cut in half by the

## "AVRO" BIPLANE

Britain's Most Successful Aeroplane.

Complete with 30 h.p. Green engine.

For Passenger—For Cross Country.

**£3600**

Not only is the "Avro" cheaper than any other successful machine, but its low horse-power halves the running expenses.

#### SMALL COMPACT MACHINE.

Two or three Avros can be housed in a shed which will only hold one of the ordinary Biplanes.

Everything Halved but Efficiency.

**A. V. ROE & Co.,**

The Aviators' Storehouse.

Brownfield Mills,

MANCHESTER.

Telegrams:  
"Triplane."

Telephone:  
688 Central.

1/2

1/2

#### MODEL COMPETITIONS.

- June 17.—Parkside Aero Club Model Competition, Harrow Road.  
 „ 17.—Aero-Models Association, South-Eastern Branch Model Competition, Mitcham Common.  
 July 1.—Kite and Model-Aeroplane Association Steering Competition, Drapers' Company's Ground, Leyton.  
 „ 5.—Kite and Model-Aeroplane Association Wakefield Cup, Crystal Palace.  
 „ 11.—Kite and Model-Aeroplane Association Steering Competition, Crystal Palace.  
 Aug. 12.—Kite and Model-Aeroplane Association Gamage Cup, London Aviation Ground, North Ealing.  
 „ 20.—Kite and Model-Aeroplane Association Longest Flight and Competition for Self-Launching Model, North Ealing.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: **AERONEX, London.**

Telephone: Mayfair 5407

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

#### UNITED KINGDOM

#### ABROAD

3 months, post free	-	s.	d.	3 months, post free	-	s.	d.
6	"	"	"	6	"	"	"
12	"	"	"	12	"	"	"

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed. "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.



# THE AEROPLANE

12  
WEEKLY

Edited by CHAS. G. GREY. ("Aero-Amateur")

Vol. I.]

THURSDAY, JUNE 15th, 1911

No. 2.



Builders of the Celebrated

*"Bristol"*  
*Aeroplanes.*

As supplied to H.M. War Office  
:: and to the Russian Army ::

Sole Agents in Gt. Britain & the Colonies  
for the famous "GNOME" Engines

The Company's Flying Schools, at Salisbury Plain,  
Brooklands, and Eastchurch, are the finest in Gt. Britain

PERMANENT STAFF OF  
15 CERTIFICATED PILOTS.

Special Terms to Navy & Army Officers.

The British & Colonial Aeroplane  
Company, Ltd.,

Clare Street House :: :: BRISTOL

Telegrams—  
Aviation, Bristol."

Telephones 2 P.O.  
74 National. 3074 National.



A Bristol Aeroplane over the Avon Gorge.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

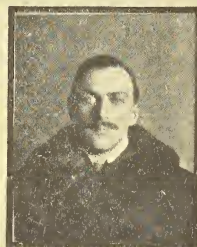


Vol. I.]

WEDNESDAY, JUNE 21st, 1911.

No. 3.

## The European Circuit—Some of the Most Notable Starters.



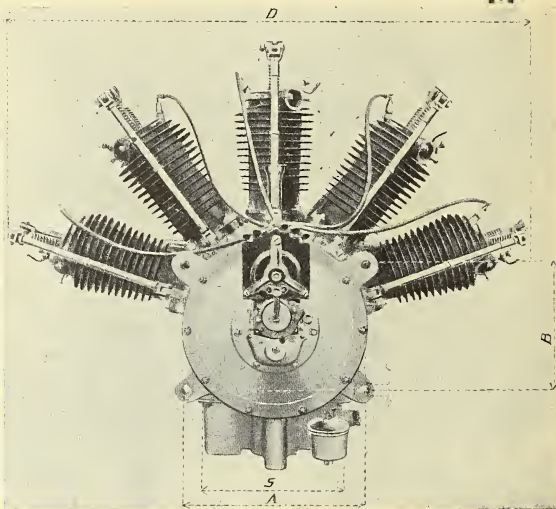
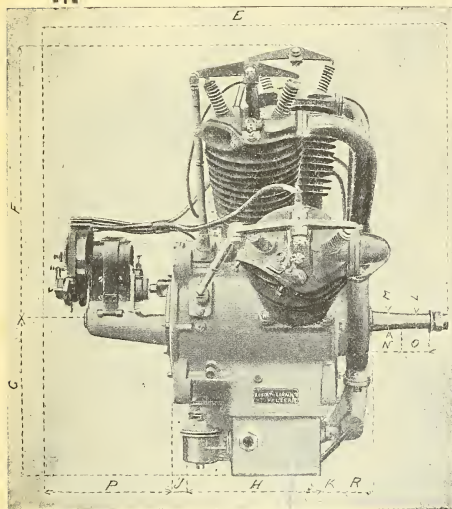
Top Row:—Morison, Lemartin, Valentine.

Middle Row:—Vedrines, Vidart, Conneau.

Bottom Row:—Barra, Garros, Tebuteau.



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

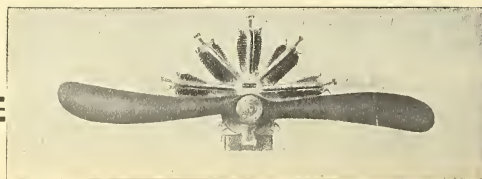
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS ... ..	51	BALLOON OR FLYING-MACHINE ... ..	61
THE START OF THE CIRCUIT OF EUROPE ... ..	55	OUR AVIATORS.—III. GUSTAV HAMEL ... ..	62
AIR-CURRENTS ... ..	56	THE WEEK'S WORK ... ..	64
A POWER-DRIVEN GLIDER (Henry Higgins)... ..	58	THE FEDERATION OF SCHOOL AERO CLUBS (R. P. Grimmer) ... ..	67
THE RIGHT-HAND TURN ... ..	59	THE HANRIOT MONOPLANE ... ..	68
WORK IN AMERICA AND ITALY ... ..	60		

## Editorial Opinions.

**Concerning Engines.**

When one reads of the results of the big competitions and talks to the average aviator who simply buys a machine and flies it, one is apt to acquire the impression that the Gnome engine is the only engine in the world that will drive an aeroplane fast and far. Now, though the Gnome is certainly a fine engine, and has done a number of extremely fine performances, people are apt to forget the special circumstances which have made the Gnome so successful; for, as a matter of fact, taken simply as an engine for aeroplanes it has vices as well as virtues.

Its chief virtue is that it is extremely light for its horse-power, if one leaves all condition out of consideration; but when one imports into the argument questions of petrol consumption and head resistance, it is found that the Gnome engine compares not so well with other engines, both British and foreign, for when a machine fitted with a Gnome engine is loaded up with petrol and oil for a flight of above four hours, it is found that the total weight of the power plant and fuel works out considerably heavier than that of any one of half-a-dozen other engines equipped for the same period.

The head resistance of the Gnome engine alone is enormous, and though several attempts have been made to fit Gnome engines to Antoinette and Hanriot machines, the result has always been a failure, simply because the power required to push the revolving disc of the engine through the air was greater than the power required to carry radiators and water.

So far as reliability is concerned, the engine really has only as much to its credit as several other engines. For instance, though Henry Farman, with a Gnome engine, has remained the longest time in the air, Tabuteau with a Renault air-cooled engine has covered a much greater distance in only slightly less time, and the late Pierre Marie Bourneque, with a R.E.P. engine also air-cooled, covered almost as great a distance as Tabuteau at a very much higher speed.

Further, though the Renault engine is more powerful than the Gnome, its fuel consumption, in a given time, is certainly no greater; while in the case of the R.E.P. it is very much less. Also flights

of over four hours' duration have been made with British Green and E.N.V. engines, these flights only terminating for lack of fuel, and not because of any engine trouble. Mr. Ogilvie's N.E.C. has also run for three or four hours a day without attention.

The mere fact of using a Gnome engine does not ensure unlimited reliability, as is proved by the fact that in the recent Paris-Rome race neither "Beaumont," Garros, nor Frey managed to get through with the same engine with which they started, and any user of a Gnome engine knows how often valves and other fittings have to be renewed.

Two chief reasons account for the success of the Gnome engine. The first of these is that, owing to the flywheel action of the engine revolving as a whole, the propeller undoubtedly gets a more even torque, and so is more efficient; but it is quite certain that an ordinary four or eight cylinder engine fitted with a reducing gear, as is the Renault and Mr. Cody's Green, would give at least equal efficiency, and probably greater, because the greater number of impulses per revolution would probably outweigh the advantages of the flywheel action of the revolving motor.

On the other hand, the gyroscopic effect of the single revolving motor is undoubtedly a constant danger, and has undoubtedly caused a number of accidents; besides which, in the case of a smash, the revolving engine gets broken up very much more badly than does a stationary engine inside a housing, as witness the wholesale smashing of Mr. Astley's Gnome at Pwelli on Whit Monday, and the practically undamaged condition of Mr. Latham's Antoinette, and Mr. Conway-Jenkins' Green engines after quite bad smashes at Brooklands. And the effects of a revolving cylinder flying off in the air, as happened to Cagno at Rome last week, are likely to be far more damaging than in the case of stationary cylinders, which should be, in fact, less likely to detach themselves.

The second reason for the success of the Gnome engine is that when a man gets a Gnome engine he knows he has got something quite different from any other engine he has handled. He, therefore, sets to work to learn the working of it thoroughly, and thereafter humours every little peculiarity about it, and nurses it as if it were a new baby.

Whereas the man who gets an engine with stationary cylinders assumes that because it looks like a car engine it can be treated more or less as such.

#### Fair Play Wanted.

Quite recently the writer watched a Gnome-engined machine being brought to its shed after a flight of quarter-of-an-hour or so.

Before being put away for the night each cylinder was carefully washed out with petrol, and the whole engine was wiped down till it was as clean as a new pin, but when the owner was asked whether his men treated their British-built engines in the same way he replied that they got along all right without so much attention.

Taking it all round, it seems fairly sure that given equal care, equal understanding, and a geared down propeller which would give them a chance of being efficient, there are quite a number of engines which would do quite as well as the Gnome, and would cost considerably less to buy and to run. Among those engines are certainly several of British make, and though the writer has never believed in upholding the claims of British-built goods when they are either dearer than, or inferior to, those obtainable abroad, he does most emphatically state that,

#### Our Newspapers.

Some time ago it was stated in print that, "owing to the fierce light brought to bear by the daily Press," there was no need for an aviation newspaper. How do our daily newspapers, in fact, deal with really important news?

On June 8th Captains Fulton and Burke and Lieuts. Cammell and Barrington-Kennett flew 48 miles from Amesbury to Farnborough in a flock. This drew a few lines in one or two papers. On the 10th they all flew back—a much more notable matter—and the fact was not even mentioned.

On Wednesday, June 14th, Captain Burke, with Captain Massy as passenger, flew from Amesbury, *via* Wantage, to Oxford. On Thursday, June 15th, Lieut. Reynolds, with Lieut. Barrington-Kennett as passenger, flew from Amesbury to Brooklands without a stop, a flight of over two hours. On the same day Lieut. Sanson, R.N., flew from Eastchurch, in the Isle of Sheppey, all over the North of Kent, to Reigate, in Surrey, going on to Brooklands next morning.

other things being equal, the British manufacturer should be given a fair chance.

#### Schools and Aviation.

Attention is directed to the article by Br. Robert F. Grimmer, on *The British Federation of School Aero Clubs*. Undoubtedly,

the younger generation is taking a very lively interest in aviation, and as Mr. Horth pointed out in his article last week, there is good reason why the making and flying of models should be encouraged even in the best class schools, for there are times when neither cricket nor football can be played, during which times models can be made, and time might even be found to fly them without seriously interfering with our sacred national games.

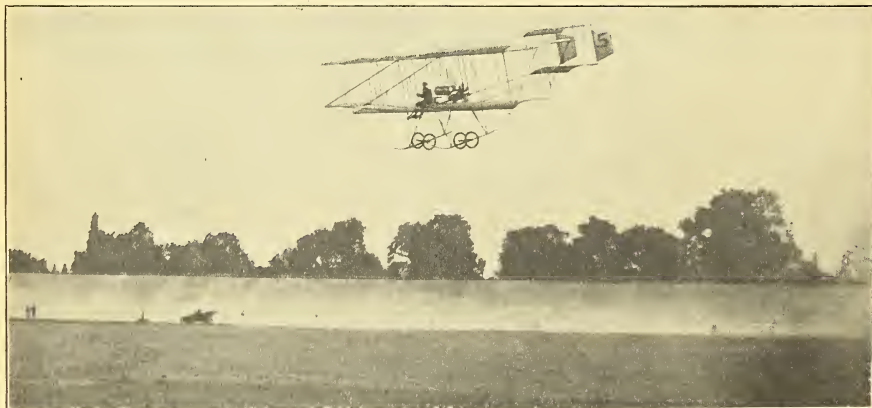
However, the school aero club can be of little use unless it is officially encouraged, and unless a master who knows something about aviation takes an active interest in it, for little good can be done if the boys are left merely to play with pieces of wood and wire and fabric. It is very necessary that they should have someone who knows the subject, to explain just how and why models behave as they do, for experiments with models may be, and have been, most misleading, unless the underlying principles are thoroughly understood.

These flights, being made by the men who form the nucleus of our aerial defence forces, should, one would think, be given the utmost prominence by those papers which cry out for more money to be spent on aerial defence, but they have practically been ignored.

Can it be because the aviators, being officers and gentlemen, do not retain Press agents to boom their performances? There was a time when British newspapers sought for news in the interests of their readers instead of depending on self-advertisers to supply them with it. However, this is a fairly good proof that a real newspaper is needed by those interested in aviation, and in the interests of aviation itself.

#### The Ferguson Machine Out Again.

After a good flight at Newtownards last week, the rebuilt monoplane belonging to Mr. Harry Ferguson, of Belfast, was wrecked. The mechanic was stunned, but not seriously hurt.



Pixton making a pretty descent "en vol plané" on the Military Bristol at Brooklands last week.

THE . .  
**SANDERS**  
**Aeroplane Co.**

---

THE SANDERS  
**Aerial Cruiser**

Fitted with  
SANDERS PATENT AERIAL GUN  
For Naval and Military Purposes.

Designed for **Rough Weather**

**Rough Usage**




**Rough Landing**

---




Machines built to rise from or alight on water  
**Works & Flying Ground - BECCLES, SUFFOLK.**



# Important Announcement.



During the next four weeks  
**The Universal Aviation Co.,  
Ltd., of 166, Piccadilly,**  
will publish on this page a list  
of certain leading Aeroplane  
and Motor Accessories. To all  
customers sending orders for  
the goods advertised, and  
mentioning *The Aeroplane*;  
a special discount of **10%(ten  
per cent.)** will be allowed.



N.B.—This discount will only be allowed off the goods advertised during the week in which the order is sent.

## The European Circuit.

### THE "STANDARD—LE JOURNAL" RACE ROUND THE THREE CAPITALS.

On Sunday last there started from the big Military Ground, Vincennes, to the East of Paris, the greatest acroplane race the world has yet seen. The chief starters were:—

British-built machines are represented by the Bristols of Tabuteau and Tétard, both great cross-country fliers of much experience, and with any luck they should do well.

A map of the course is given here, with acknowledgments to the *Standard*, and on it will be found the days on which the competitors should be at the various controls.

On Tuesday next the competitors are free to leave Calais at 3 a.m., so the leaders may be at Dover before 3.30 a.m. Thence to Shoreham is only forty miles, so the first there may possibly arrive by 4 a.m., the distance being only sixty miles from Calais. The stop at Shoreham may be as short as the aviator likes, so, if there be a southerly wind, the first man in may get to Hendon as early as 5 a.m., and there should, in any case, be several arrivals between 5 a.m. and 9 a.m., so all North London will have a chance of seeing the arrivals before going to work. It should be noted that the actual landing and the disembarking of the aviator is the most interesting part of the performance, and all this can be seen perfectly from the shilling enclosures, though it cannot be seen from outside the grounds.

#### The Circuit Course.

going to work. It should be noted that the actual landing and the disembarking of the aviator is the most interesting part of the performance, and all this can be seen perfectly from the shilling enclosures, though it cannot be seen from outside the grounds.

#### First Stage Results.

The first man into Liège was Vidart (who flew a Hanriot at Lanark). His time was 3 hrs. 9 mins. 54 secs. The next was Védérines, 3 hrs. 38 mins. 15 secs.; third, Weymann, 3 hrs. 55 mins. 16 secs. Then Lieut. de Conneau, *alias* "Beaumont" (4 hrs. 2 mins.), Barra, Duval, and Garros.

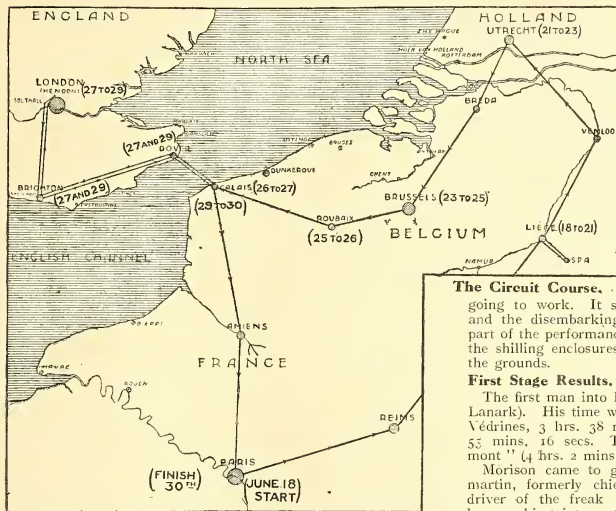
Morison came to grief at Gagny, but was not hurt. Lemartin, formerly chief tester at the Blériot works, and the driver of the freak 100-h.p. four-seater at Pau, was killed by smashing into a tree a mile from the start, through his machine getting out of control. Landron's machine caught fire at Chateau-Thierry, and he was either killed on landing or burnt in the wreck. Lieut. Prinoteau started from Issy on his Blériot to join the competitors, and had only risen to 70 ft. when the jet which does duty for a carburettor caught fire. He attempted to land quickly, but his machine turned over, and he was burnt with it. Valentine came down near the Belgian frontier and broke a propeller, but intends to "worry through."

Captain J. D. B. Fulton, one of the British *Commissaires* for the race, writing to *THE AEROPLANE* directly after the start, says: "Poor Lemartin was flying a Blériot with a type of wing unknown to me. About half the wing surface consisted of a very flexible single-surfaced trailing edge. This single-surfaced portion begins about halfway back from the leading edge, which is of the usual double-surface pattern to that point. I guess the crowd at least 100,000. All the organisation of the police was shamefully bad. The crowd were fairly docile, and though they broke through once or twice they were easily pushed gently back by cavalry. Train was going well on his monoplane; so were the Morane machines. Astras (i.e., French Wrights.—Ed.) put up a bad show. Both Bristols started."

In all there were thirty-eight starters, and of these fifteen got to the end of the first stage at Liège, which is 202 miles from Paris. Considering that there was a strong wind blowing, even at the start, this is a very good average, and one might consider the race a great success but for the lamentable accidents at the start.

In the conquest of the air lives must be sacrificed, it is true, but there is no doubt that owing to the recklessness of many aviators in refusing to take reasonable precautions, and the obstinacy of many constructors in sticking to machines which are known to be of dangerous design, many valuable lives have been, and will be, sacrificed.

These big races are a fine advertisement for the sport, but they do nothing to help the constructor who is striving to produce a safe and practical aeroplane, for they lead to the production of a machine in which everything is sacrificed to speed.



Tabuteau (Bristol), Bathiat (Sommer), Tétard (Bristol), Védérines (Morane), Kinnerling (Sommer), Gaget (Morane), Mola (Sommer), Vidart (Deperdussin), Wijnmalen (Farman), Garros (Blériot), Morin (Blériot), Amerigo (R.E.P.), Morison (Morane), Valentine (Deperdussin), Lemartin (Blériot), Landron (de Pischoff), Weymann (Nieuport), Lieut. de Conneau (Blériot), Barra (M. Farman), Duval (Caudron), Prevost (Blériot), Renaux (M. Farman).

The only representatives of Great Britain are James Valentine and Oscar Morison, both of whom have unfortunately decided to drive French machines, Valentine driving a Deperdussin and Morison a Morane-Borel. Mr. J. W. Dolphin, himself a certificated pilot, is, with Mr. Lowe, of Brighton, looking after our two aviators, Dolphin driving a 68-h.p. Beriot and Lowe a 38-h.p. Daimler, laden with spare parts for the machines and engines. Messrs. Stronach and Williams, acting as engineers in charge at the controls, are following the race by train from stage to stage. And Mr. G. B. Cockburn and Captain J. D. B. Fulton (of the Air Company), who are the *Commissaires Sportives* for the R.Ae.C., may be depended upon to see that our men get fair play.

On Friday last, Mr. Dolphin, just over from France, and off back again the same night, reported to *THE AEROPLANE* that Valentine had, on Thursday, taken a Deperdussin two-seater up to 2,000 ft. in very fine style, this being his first high flight; but that his racing machine, to which he has had his own Gnôme engine fitted, was only to be delivered to him at Vincennes on Saturday. Mr. Dolphin also reported that Morison was flying his new Morane-Borel to Vincennes, but eventually Morison made his first flight in the race itself.

Not being part of the official teams of the firms who built their machines, neither Morison nor Valentine can rely upon any help from the repair crews of the firms, so, in view of the way in which the competitors in the Paris-Rome race used up machines and engines, it will be a very fine performance if either of our men get through to the finish, for they will have to do so absolutely on their own account.

## Air Currents.

## AERODROME DIALOGUES.—I.

(Any aviator and any engine builder.)

Av.: "I don't think that cylinder ought to have blown off my engine the way it did."

E. B.: "It certainly wasn't our fault. You must have kicked the cylinder getting into the aeroplane."

Av.: "I don't think I did, and even if I did that surely oughtn't to have bent it."

E. B.: "You must have done, and any severe shock like that crystallises the special steel we use, and weakens it enormously."

Av.: "What do you propose to do about it?"

E. B.: "I have just patented a special form of guard, which will quite obviate all accidents of this sort in future."

Av.: "How about the white metal running out of that big end?"

E. B.: "You must have bent the cylinder when you kicked it, and of course that would cause a torque in the white metal in an unnatural direction, so of course it came out."

Av.: "How about the magneto pinion coming unscrewed?"

E. B.: "You must have had a back fire, so you can hardly blame us for that; besides, it is so very easily repaired, you merely have to take the engine out of the machine, turn it upside down, and remove the oil pump and sump, you then turn the motor right way up again and remove the valves, camshaft, cylinders, and crankshaft; then, after turning the motor upside down again, you will find you can easily get at the loose pinion with the special tool we provide."

Av.: "Sounds rather a job; can't you do something to prevent it occurring?"

E. B.: "Quite unnecessary. You have only to pull the motor over quite quickly when starting, and the motor can't back fire. [Short pause.]

E. B.: "We have just supplied a motor to Smith for his new machine, and he is every pleased with it. It gave 50 h.p. for three hours at our works before delivery, and was never stopped once during the whole run."

Av.: "How long has he had it?"

E. B.: "About a week, and he tells me it has given no trouble whatever."

Av.: "Has he run it at all yet?"

E. B.: "By the way, I ought to tell you that after the three-hour test run we had the motor down; everything was in perfect order, you could hardly detect any wear at all in the bearings, and we didn't have to renew even a piston ring."

Av.: "Sounds all right . . ." [Pause.]

Av.: "Incidentally, I believe Jones wants to see you. He tells me he has stripped the timing wheels in one of your engines."

E. B.: "That wasn't our fault. The wheel wasn't getting any lubrication. I told him to drill a small hole in the inside of the crank case to let the oil through, showed him where to drill it, lent him a drill, and did everything I possibly could for him. Some men don't deserve to have an engine." [Pause.]

Av.: "What about tea?"

E. B.: "Good idea. Let's go." [They do.]

CONSTANT READER.

A correspondent suggests that the Antoinettes were at Brooklands on Whit Monday *pour passer Latham*, and nearly did. If M. Latham's name is pronounced French fashion quickly there is an alleged joke to be found. (N.B.—No prizes are offered for the solution.)

The following true story comes from America: An aviator flying over heavily-wooded country was alarmed to feel that his engine had suddenly struck work. Being, however, a man of resource, he hooted loudly, in the manner of an owl in distress; whereupon all the owls in the neighbouring woods promptly rallied to the call, and, flying up to him, took a good grip of his spars and *flew*, while he steered for the nearest field, eventually landing in safety. He rewarded the intelligent ornithopters by dividing among them the contents of the oil tank of his Gnome.

## AERO-MANIA.

The following effusion is taken from *M.A.P.*, the introductory note being presumably by the Editor of that paper—

"I have received the following very interesting letter from Dr. Forbes Winslow, the eminent mental specialist:

"Sir,—I am convinced, from a careful perusal of your remarks, that you are one of the opponents of this dangerous flying mania, which is making such progress in our midst as to warrant a special Act of Parliament being issued to deal with the gravity of the situation. I do not allude to an ordinary balloon, but to what is generally understood as a flying machine, one not inflated with air.

"I remember the time, not many years ago, when I was able to examine, with a view of certifying as 'a person of unsound mind,' one who was under the delusion 'that he could fly.' I also know a case who thirty years ago was sent to a lunatic asylum for so stating, and is at the present time confined as a person of unsound mind in one of our Metropolitan asylums, suffering from the same belief.

"To imagine that anyone can fly was a delusion then, and remains one at the present time, and should be so dealt with. Birds have wings; we cannot imitate Nature so as to vie with them. In my opinion—and I have so stated this in public and in the Press—it is the most dangerous form of suicidal insanity that we possess.

"It is increasing to such an alarming extent that it is a satisfaction that the Government are recognising what I have so long contended for. By their prompt action those suffering from this suicidal mania are allowed to break their own necks, but homicidal mania is prevented.

"The Bible says, 'Thus far shall ye go, and no farther.' The air is made for birds, the earth for human beings, the sea for fishes. If we attempt to conquer the air or to exist under the sea, we fly in direct opposition to Providence.

"FORBES WINSLOW."

Three other quotations make appropriate comments:—

(a) "You can't touch pitch and not be defiled."

(b) "Evil communications corrupt good manners."

(c) "Physician, heal thyself."

The following letter has been posted on the aviators' notice board at Brooklands:—

"DEAR MR. LOCKE KING,

"Would it not help you to control the 'airmen' living at or near Brooklands if you receive a protest from the residents in the neighbourhood against aviation or aviation practice being allowed before 8 a.m.?"

"Since the days have become longer the airmen have frequently commenced about 5 a.m., and the continuous noise they make is incompatible with sleep. I understand that the people in the cottages between here and Blyfeet are complaining greatly. Possibly you would put a stop to what is becoming a real nuisance without a public protest being made, and I think I have never made any unreasonable complaints.

(Signed) C. H. JOUBERT DE LA FERTE.

"P.S.—These last two mornings I have, personally, had no sleep after 5.30 a.m."

One might suggest to Mr. C. H. Joubert, etc., that he should become an active supporter of the Daylight Saving Bill, and persuade himself that 5.30 a.m. is really 7 a.m. Or, as an alternative, he might go to bed earlier, and arise with the lark, and other aviators.

A prominent aviator is said to suffer severely from hayfever. It is a lucky thing that he flies a machine in which he can remove both hands from the controls to attend to this distressing complaint; for one can imagine nothing more awkward than a sneezing fit in, for example, an original Wright machine.

Another correspondent, writing *apropos* of the river *remou* at Brooklands, alleges that the experiences with the glider described last week were not due to the *remou* or to the glider, but to the fact that the inventor had solved the long-sought mystery of the "sly-hook," the philosopher's stone of the engineer.



**E. N. V.****ALL-BRITISH AVIATION MOTORS**

Made in Three Sizes, viz. :

**35 h.p.**\* **60 h.p.****100 h.p.**

\* Winner of Baron De Forest Prize of £4,000---1910.

Mr. Sopwith's recent record flight over Philadelphia, U.S.A.,  
was made with a 60-h.p. E.N.V.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESDEN, LONDON, N.W.

\*Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

**HOWARD T. WRIGHT**
**110, HIGH STREET,  
MANCHESTER SQUARE, W.**

 Telephone  
8574 GERRARD.
*Eight Types***Monoplanes**From **40** to' **80** miles 'per hour.**Biplanes**From **36** to **50** miles per hour

Catalogue on Application.



Winner of De Forest Prize.

## A Power Driven Glider.

By HENRY HIGGINS.

No doubt many of your readers will remember an account that was given of a machine which I constructed, and successfully used as a glider, on our hills at Cleve, near Cheltenham. An account of my experiences may be of interest.

To begin with, I obtained a 10-12-h.p. twin-cylinder engine, the weight of which, fitted with magneto and carburetter, is 66 lbs., (quite enough for the power). I thought it would be quite an easy matter to fit it in the machine, and promised myself that by Christmas I should, at any rate, know what it was like to be pushed along by a propeller, but fate decreed otherwise, for by Christmas I found I was far from realising what I had anticipated.

First, there was fitting an engine bed. After fixing the ash spars in many different ways, I at last satisfied myself that they would stand a reasonable chance of carrying the engine without shifting from where I had put them, so I bolted two good ash spars on to the crank case and just laid them across the others, as may be seen in the photograph, and bolted them down with V bolts. Having so small an engine, I decided that to get the best results it would be necessary to use a reduction gear from the engine to the propeller, as then I could build a more efficient propeller.

Gear wheels I found I could not afford to have cast, so I obtained a large and strong chain wheel as used on ordinary bicycles. This I fixed to a collar on the propeller shaft, which, by the way, is a hollow steel tube 1½ ins. diameter, ½ in. thick; but not until I had tried various ways could I get it to hold firm. Finally I fixed it with ½-in. bolts and spring washers. Then I turned up a collar to fit the engine shaft, and on this I fitted a small toothed wheel, which reduced the engine speed to propeller 3·5 to 1.

Having at last got my shaft and engine fitted, I began to think I was nearing the beginning of the end, so to speak, but, to my dismay, the first time I tried to start the engine up by swinging the propeller I found that it put a twist on the bearings of the shaft, which put the chain out of line. I could see I should not be able to start up this way, as I have to do this by myself, and I found that the machine would swing about too much although tied up, so I fixed a starting handle on to the crank shaft, and when the bearings were stayed with light steel tube I found that I could start up quite easily. But this was the cause of other troubles, as I had not run the engine any time before I noticed my petrol tank walking along the main spar towards me. And vibrations! Well, I could not keep my hand on the switch to stop the engine.

After trying various ways of fixing my tank, I decided that I would fix it in a different place, but before doing so I found that it had burst where the pipe was connected to it, so I scrapped it, and made one out of an old copper tank that had been used on a car. This one I made streamline form, and placed it where now seen. In this position it gives no trouble, as it seems quite content to stay there. Having fixed my tank

again, I began running the engine once more, and noting where an extra stay wire would be useful, adjusting the carburetter, etc.; but before long I found that no less than four of the tubular stays had given out, two of which acted as radius rods between the sprocket wheels.

I began to think that my troubles would never cease, but if you take a job on of this description you must not be dismayed if you find troubles. After making and remaking, setting and resetting different parts of the machine, I got everything to do the part it was there for; but the propeller I had was one I made and designed to run at the engine speed, and in it I incorporated an idea that I thought I should like to put to the test, but as I could not drive it more than about 600 r.p.m. I could not satisfy myself as to the results. The area, as will be seen, is very small, so I designed and built the other one shown in photo, which I think at any rate should make her hop. It is built of mahogany and Karri pine, and has a diameter of 7 ft. 2 ins.

As I had the engine running well, and could get a thrust of 50 to 60 lbs. when machine was anchored, I thought I would take it out and get used to the feel of it before using the large propeller, as the ground I was going to use was too small for any speed worth speaking of, and as I wanted to see how she was balanced on the ground, and several other things.

I towed the chassis behind a car, and the wings were taken to the ground on a lorry. The ground was one that is used by the local football club: the surface is fine, but for an aeroplane to play on it is far too small. The engine was no sooner started than the horse attached to a large mower on the ground showed its resentment at our intrusion by bolting and putting the mower out of action. After two or three runs across the ground, I found I could not get the front to lift enough, so, to adjust the balance, I loaded the back skid up with stone slabs. This increased the speed considerably, but even then the skid in the front was carrying a lot of weight, which meant that the wheels would have to be brought further forward.

Towards midday one of the engine bearers gave out from adjusting the chains too tightly, so, having satisfied myself as to what alterations were necessary, I thought that, as so many curious people wanted to get on to the ground, I would admit them, but make them pay a small charge. This I did, and made enough to pay for petrol and expenses.

I am making a few more alterations, and with the large propeller fitted in a few weeks' time, I hope to be able at any rate to get a few hops out of it. The total weight of machine, less pilot, is about 240 lbs., and the surface 196 sq. ft. Should any of your readers be working on the same lines as myself—that is, building a machine to fly with a low-powered engine—I should be pleased to hear from them, as two heads are always better than one, and an exchange of ideas may be to our mutual advantage. I wish your new paper every success.



Mr. Higgins and his glider, now fitted with auxiliary power.

## The Right-Hand Turn.

By P. K. TURNER.

A great deal has been said and thought during the last month or two on the subject of the right-hand turn, and I have been at some pains to collect the ideas of various pilots in order that something might also be written about it.

I am glad to say that a popular superstition as to the intrinsic difficulty of turning to the right seems to be disproved on examining the evidence.

One thing that had occurred to me in this connection was the difficulty experienced by many roller-skaters in making right-handed turns. I suffered from it myself till I found a radical cure: I went in the morning every day for a week to a rink which was at that session very sparsely attended. There I consistently made nothing but right-hand turns and straight flights for two hours a day, with the result that, while at first I made several *atterrissages brusqués*, I can now proudly boast that my feet are ambidextrous.

It was this experience that led me to think that perhaps there was no inherent difficulty about a right-hand turn in the air, and I find that within certain limits this is so. In fact, the main reason why pilots as a rule preferred left-hand turns was that they had for a long time, both in learning and in practice, made no others. The matter is complicated by the fact that the two turns are, on an aeroplane, essentially different, in consequence of the gyrostatic couple of the propeller and engine (when a rotary engine is used) and the reaction torque of the motor.

There is quite a large amount of misunderstanding about these two matters, so perhaps it will be wise to express them.

The reaction of the motor gives a constant torque, tending to bank the machine in one direction. The gyrostatic couple of the propeller (and the engine, if it be of the rotary type) only comes into action on turning or tilting the machine, when it tends to make it tilt if it is turned or turn if it is tilted.

Let us, then, examine the effects of these forces on making turns on two machines which are typical of their classes—(1) in a Farman, (2) in a Blériot, both with rotary engines.

In a Farman the rotary motor rotates in a left-handed sense, or contra-clockwise, when one regards it from behind and facing the direction of flight. The result is (1) a constant torque tending to depress the right wing, (2) on turning to the left a tendency to dive, (3) on turning to the right a tendency to depress the tail.

Here, as a matter of fact, there is an added difficulty in turning right-handed, inasmuch as it is very dangerous to allow a Farman's tail to droop, whereas, like a cat, it is quite safe to handle while its tail is well up in the air.

In the case of a Blériot, where the motor rotates right-handed, or clockwise, there is (1) a constant torque depressing the left wing, (2) on turning to the left a tendency to rise, (3) on turning to the right a tendency to throw the tail up and dive. Here there is very little difference in the difficulty of the turns—only, as before, they are quite different: in one case (left) the machine may bank too much, and requires holding down; in the other it will not bank enough, and will (fore and aft) require holding up.

In a machine driven by a non-rotary motor the fore and aft balance is scarcely affected by the gyrostatic effect of the propeller alone, and there only remains a slight difference in the

handling for the two turns, owing to the constant reaction torque of the motor.

In conversation with pilots who, in order to get their *brevets* under the new rules, have been from the beginning taught to make left- or right-handed turns indifferently, one finds these features well recognised.

Those who have learned on Farman, or imitation Farman, machines say that right-hand turns, though no more difficult than left, are tiring, from the fatigue of holding the lever at arm's length to keep the tail up. Blériot ex-pupils state that they find wide right-hand turns as easy as left, but that in sharp right turns it is hard to make the machine bank up enough on the left.

Pupils on two school machines of my acquaintance, which have stationary engines, state that they find both turns easy; and it has been obvious to me, as an onlooker at *brevet* flights, that, after the same training, those pupils who are on machines with stationary engines have, without exception, made cleaner, sharper and safer turns than the others. *Verb. sap.*

I am glad to say that the younger generation of pilots have this advantage, for it is a true example of progress; and although many of the pilots of 1909 are incomparably better and more experienced fliers than nearly all of the later ones, yet I do not believe there are any of the old pilots of 1909 and 1910 who would make turns right-handed with the ease of their "left-handers," and I doubt whether they would make them as well as many a pupil after three weeks' training to-day.

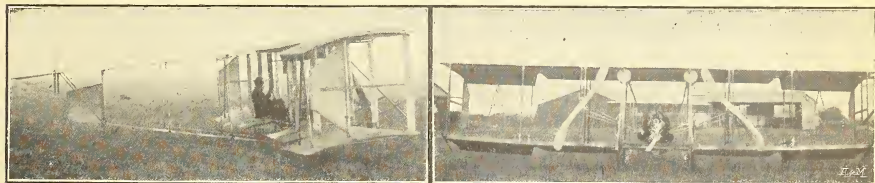
It is fatal to get set into a habit of turning in one direction in flying as in rinking, cycling or motoring; for I doubt whether any of our racing motorists would take the banking at Brooklands at ninety miles an hour if they had to do it right-hand inside without a lot of practice. And I know cycle racing men cannot do themselves justice if they have to race right-hand in. As a matter of fact, right-hand tracks have now been abolished, the difficulty in all these cases being simply due to the fact that the performers always have turned left-handed, and have had no practice in the other direction.

I should like to see at Brooklands a large notice on the ground, analogous to those on the wall of a rink, whereon is written at one period "ALL FLY," and at another time "REVERSE." Perhaps anon we shall also have "CLEAR SKY" (for *brevet* flights), "PARTNERS ONLY" (at £2 2s., £5 5s., and upwards), and other legends.

### Amphibious Experiments.

Lieut. Wilfred Parke, R.N., called on THE AEROPLANE last week on his way through town to join Captain Sanders at Beccles in experiments with the new Sanders biplane. The machine has already proved its ability to fly off and over land, and Lieut. Parke reported that as soon as it is thoroughly tuned up it is to be fitted with floats, and experiments are to be made with it in starting from and alighting on water. It will be remembered that the Sanders biplane is built specially to be easily packed and unpacked and stowed in a small space.

The design of its chassis, which is exceptionally strong, is very suitable for the fitting of hydroplanes, so the machine has every chance of success. Added to this, Parke is a clever and plucky flier, so he is sure to get the best out of the machine.



THE JEZZI BIPLANE.—The machine in its latest form. Note the large tail elevator, and the little cooling screw in front of the engine between the big geared-down tractors.



## Over-Sea Notes.

## What is Doing in America.

Mr. Philip Wakeman Wilcox writes from Long Island:—"Some of the doings in this country are marvellous to read about, but I am afraid that you see more about them in England than we do over here, because here the papers are very much on the look-out for fake stories, and as a result, it is hard to get anything in the papers which is not pretty true."

"There is mighty little being done over here which is at all startling. Perhaps the most energetic man in the experimental line is Mr. Glenn Curtiss, who has been doing the hydro-plane stunts in California. There has been some good flying going on in different sections of the country, but I do not think that there has been anything that could compare with the stunts done in your part of the world. I think the man who is going to do more for aviation in this country than anybody else is Mr. Moisant, who is the brother of John B. Moisant, the man who was killed last year trying for the Michelin trophy."

"He is the president of the Hempstead Plains Aviation Co., which has leased a tract of land of about 1,000 acres out here in Long Island, and is going to have the best proposition in the country when things get going. A contract has been given for five concrete steel hangars to start the ball a-rolling, and he hopes to have a number more before the summer is over. He also plans to erect a large grand stand, factory, and club house on the grounds. This same company conducts the Moisant School of Aviation, which is now running. There are now five students regularly practising, and they are all in the air. The Blériot type machine is being used. All of the machines are built in the factory in New York City."

"I am sending you a picture of Sopwith's machine after the wreck. The man standing up is Mr. André Houpert, the school pilot. The others are mechanics, but you can get an idea of the condition of the machine after the wreck."

"Miss Quimby, who is the dramatic editor of *Leslie's Weekly*, has been quietly taking lessons since the last of April, and at that time has really accomplished a few excellent flights. Until May 11th, when she made the best of her trips, her identity had been a secret, for she dressed in a tight-fitting aviator's suit, and wore a deep hood. She and her instructor, André Houpert, have done all their work shortly after sunrise in the mornings."

"For the past two years the Aeronautical Society has been the real centre of all activity in a real way among Eastern aeronautical followers. The field at Mineola was in truth the first field in the United States, and on it have been conducted some of the most important experiments to date. That its office as a public point for flying has been terminated will be a surprise to more than one. Notification was given the Society on May 28th that it must vacate within the next thirty days."

"While the action is not unexpected, the dispossession of the thirty odd aviators with their machines causes considerable anxiety. Large flat fields like Hempstead Plains are very rare in the vicinity of New York. Early this year the fields near Mineola, as well as the large field in the neighbourhood of Westbury, were leased for a term of five years to the Hempstead Aviation Company, which has arranged to give the Moisant School exclusive use of the property. Moisant, as well as officers of the real estate company, holds large interests in the organisation which now has the field."

## The Latest from Sopwith.

Writing from Columbus, Ohio, on June 2nd, Mr. T. O. M. Sopwith says: "How do you think the outfit looks at the Columbus, Ohio, meeting? Everything going strong, but impossible to get good petrol here, so not much power. Have to stir it up with a stick before you put it in the tank."

Writing last week, Sopwith says: "The 'Family Tank'—the dear old 'Family Tank'—is more or less a thing of the past. We were at the Columbus meeting and flew every day, and on the last night we had a repetition of Dover. There were two other machines with us in a tent, and the whole thing collapsed. In the morning there was hardly a piece of the machine left whole. Luckily the engine had been taken out, but the planes, elevator, and tail were badly smashed. I think we will be able to rebuild in about a fortnight, and we

are starting in at once. It is bad luck, but as this is our third smash altogether, we must hope for better luck for the future."



**SOPWITH IN AMERICA.**—Above: Miss Sopwith, T. O. M. Sopwith, and J. Dudley Sturrock, with the English mechanics at Columbus. Below:—Sopwith's Blériot at Hempstead with André Houpert in charge of the wreck.

## Italian Notes.

Ciro Cirri, whose death occurred on May 28th at Voghera, as the result of terrible burns caused by a forced descent and subsequent conflagration of his Blériot-cum-Gnome, was one of the unlucky Piccolo-Céi trio, all of whose deaths have been unusual. Céi's decease is still being investigated here, the body having been recently exhumed (*sabotage*). Cirri was a Roman.

Roman also was Raymond Marra, who was killed at the Roman meeting on 8th inst. by a treacherous wind, aided by local eddies, which beat him down on to one of the big supports carrying the electric power current across country. He is said to have been electrocuted, as the machine—a Farman—was set on fire, and his body, though found well away from the machine, was burnt.

Whatever the cause of the recent numerous conflagrations, would not the enclosing of petrol tanks in leather or some resisting composition be advisable? Anything which would prevent the immediate exit of petrol should the tank spring a leak would be useful. Sparks are struck by the motor, etc.,

at the actual moment of contact with the ground, not afterwards. Cirri's tank was, they tell me, pierced by a wire stake, which the leather might have prevented. [What about solidified petrol?—Ed.]

The writer, while recently at Rome, took advantage of a lull in the misfortunes which dogged the efforts of those managing the flying week to go out to the Parioli racecourse, where the meeting was being held, and where the Paris-Rome competitors had landed and were expected to be "showing off." At two o'clock in the afternoon, and in the Roman sun no one was present except the aviators and the Press, the latter at loggerheads with the committee over the suspension of their hangar passes. A strike was neatly concocted, and in twenty-four hours the authorities capitulated. Notwithstanding, some excellent flying was done towards the evening, Garros being apparently the great favourite, while Vidart (Deperdussin) thoroughly explored the Roman garrets and church steeples.

Cagno, Ruggerone, and Marra—who was killed later on in

the week—were causing the Italians to sing *Sursum Corda* by their attempts to win the Circuit of the Tibur, a 300-kilometer cross-country flight formed by six trips round a 50-kilometer circuit.

I noted the prevision of protection for the pilot on most of the Farman type biplanes, and also the presence of an Italian biplane of this type, the *Asteria*, with Cavaglià in charge.

On one of the trips for the Circuit Cagno was the victim of a curious accident. One of the cylinders of his *Gnome* came adrift and broke a skid, so that he was unable to prevent some damage to the machine in the forced landing which resulted.

The Farman monoplane which Goddard attempted to fly was evidently out for a car race only, and, although very fast, did not prove to be a flier, at any rate as far as the air was concerned. This was a great disappointment. Its appearance when on the ground is comic in the extreme, and it will certainly get a nickname. The "fussy fowl" or "hen with chicks" would both suit.

## Balloon or Flying Machine—A Problem of the Future.

[The following short article has been written for THE AEROPLANE by a distinguished German student of aviation, and may be taken as a fair indication of the views of most Germans who have studied the subject. From this it may be gathered that the German affection for dirigibles, though not so strong as formerly, still exists in some degree, and has its basis in a reasoned belief in the utility of dirigibles for certain purposes, while at the same time recognising their limitations.—Ed.]

By a kind Providence we have been allowed to see the marvellous rapidity with which aeronautics has developed in the short time of not quite five years. Later generations, who have some historical interest in this matter, will envy us.

Doubtless we have done so much in order to transmit to posterity all the facts, chronologically and systematically summarised, that it will surely be able to realise this rapid progress. But just as we, at the present time, laugh at the enthusiasm shown in the days when Santos Dumont made his first flight at Paris and covered with his biplane a distance of 150 yards, so our descendants may smile with pity when they read the records of Paulhan or Latham.

It will be and it must be like that, for the law of nature requires it. A thousand years ago men longed for the conquest of the air; at the present day their hopes are beginning to be accomplished. What will the future bring?

I mentioned before only the success reached by aeroplanes. One need not be a professional to acknowledge the statement that the flying machine can still be improved a great deal. This fact one can conclude not only from the progress of flights recently performed, but also from the defective construction of engines and machines existing now.

In 1906 the longest distance covered was 230 yards. In 1910, 350 miles. But in 1910 the number of accidents has also increased; drops from a great height, and, therefore, more dangerous, are the order of the day. A flying machine, type 1910, is, in spite of great improvements, just as helpless against lateral gusts as a machine three years ago; and a "Bleriot No. XV" is, for instance, no less the plaything of wind and weather than a "Bleriot No. I."

But in a few decades this picture will have changed. Every variation of equilibrium of the machine due to atmospheric pressure will set in motion a mechanism which will either restore the former balance, or create a new position adapted to the change of the altered air-pressure.

The engine will be capable of rendering greater performances. Whether the petrol-turbine should be sooner or later used in aeronautics or not, technical engineering will always have to aim at obtaining not only a diminution of the relative weight, but also of fuel wanted for a certain amount of power. Just the unfavourable ratio of fuel to the afforded power is at the present time the cause of a great reduction in the duration of flying performances. Besides, the engines will in future be much more durable than they are now, being useless after working a short time at highest speed.

So much for the evidence of the great capability of development regarding flying machines. But if later generations will hear of the great performances of a *Zeppelin VII*, a *Parseval*, or of any other modern air-cruiser, they will have to confess that they have not been able, to a great extent,

however, to surpass these performances. They will employ a dirigible balloon only for special occasions, as for conveyances of goods in time of peace and for certain purposes in warfare; thus only there, where no velocity but the capability of carrying heavy loads is wanted.

That gives us, however, a hint to find the reason of this remarkable fact: the actual impossibility of increasing the speed of an air-ship in such a way that it could be a match for the rapid heavier-than-air machine, or at least come to such a point as to be independent of the fastest air-currents. It is probably well known that the effect of an aero-engine increases theoretically with the cubic root of the speed of an air-ship. This extraordinary unfavourable ratio of those two factors increases still in practice, because the effect of the propeller by using high-powered machines gets continually worse. For instance, a propeller which gives its greatest effect by 300 h.p. would produce by increasing the power of the engine to 400 h.p. an increase of speed the graphic curve of which is not proportional to the line indicated from 300 to 400 h.p. Assuming the power of the engine as abscissa, the effect of the propeller as ordinate, the continuation of this curve would show how the ratio gets worse and worse, until the curve would remain parallel to the principal axis, that is, an increase of power would not produce any increase of speed.

And here comes a third moment: the increasing weight of the engine. Taking the effect of the propeller into consideration, an engine of over 600 h.p. would be wanted in order to produce a speed of 20 metres per second. This speed would be sufficient for an air-ship to perform flights on 270 days in a year. The weight of the engine would amount to 2,500 kg., or 5,500 lbs. Counting thereto 700 kg., or 1,540 lbs., for petrol (five hours), and 300 kg., or 660 lbs., for oil and water, the total weight of 3,500 kg., or 7,700 lbs., would necessarily increase the diameter of the balloon, and therefore also the coefficient of resistance dependent on it.

But the latter would soon, especially by the non-rigid type, increase to such an extent that it would be, and is therefore, impossible to produce a higher average speed than 16 metres per sec. That is the point where aero engineering is standing still at the present time. And the further we proceed the more unfavourable the ratio will be found between the factors: power of the engine, effect of the propeller, speed, weight, and coefficient of resistance.

In consideration of all those facts, one may easily conclude that the rigid type has a greater future. The non-rigid type would need, by increasing the diameter of the balloon, huge apparatus in order to maintain the envelope tight, for the larger it is the easier a strong air pressure will be able to deform it. Apart from this new increase of weight, the shape of the whole airship will become more clumsy, and the coefficient of resistance rises to an immense number.

Therefore a practical employment of the non-rigid type seems to be impossible in future. For sporting purposes it will be used.

The future belongs to the flying machine—the monoplane for a single one, the biplane for the conveyance of the multitude. But whether a connection of balloon or flying machine, based on other suppositions, will not mature, that the future will tell us.—A. V. von F.



## OUR AVIATORS. III.—Gustav Hamel.

There are several good reasons why Gustav Hamel should have a prominent place among our aviators, though he has not long been known to those who take a casual interest in aviation.

In the first place, he is about our best chance of winning the Gordon-Bennett, for I think it will be admitted that no one else in the country flies a monoplane quite as well as he does. And, besides, he has acquired one of the newest roo h.p. racing Blériots, similar to that on which Leblanc has just done the Gordon-Bennett course at a speed of 75 miles an hour. Provided he is given a machine as good as Leblanc's, and that no mistake is made in fitting the wings, as in Grahame-White's case last year, I should feel inclined to back him against anyone France can put up against him. He is now in France, practising on his Gordon-Bennett racer, so let us wish him luck.

Secondly, Hamel is the most consistent high-flier and cross-country flier we have got, for his various high flights, taken together, would certainly exceed by far the total of heights reached this year by any other British aviator. Also, he flies with his head, knowing perfectly what is risky and what is not, and never takes unnecessary risks. And, a most important point, he has a perfect genius for finding his way across country, never having lost his way in any of his numerous cross-country flights, and nearly always making a bee-line for his objective.

Gustav Hamel was born on June 25th, 1889, in London, where his father was, and is, a well-known doctor. He was educated at Westminster School, and, before fixing definitely on what profession he intended to follow, became enthusiastic about aviation, with the result that he is now giving his time wholly to the advancement of the sport.

His first experience of seeing a machine actually flying was at Brooklands early last year, when he saw George Barnes make one of his numerous attempts to coax an all-British monoplane to stay in the air. Thereafter he went to France, and started his own work, his early efforts being at Issy-les-Moulineaux, where, on August 12th, he made his first flight on a Blériot, five minutes after he sat in the machine for the first time.

During the winter of 1910-1911 he spent most of his time at Pau, eventually getting his certificate in January of this year on one of the early Morane-Borel monoplanes. Like most British aviators who go to a French "school" to learn, he was his own instructor, and he does himself credit.

I well remember being told, some four or five months ago, in the R. Aë. Club: "There's a young chap called Hamel,

who has been flying one of Grahame-White's Blériots at Hendon, who flies like Morane. Keep your eye on him, he's a wonder!" He certainly is; for his high flying, turning, diving, and especially his landing—a point in which many good fliers fail—are about as good as they can be.

Though Hamel has done so much so well on a Blériot, he is really a very versatile flier, for, besides the Blériot and Morane, he has flown successfully (i.e., without making splinters) on Farman, Howard-Wright, and Voisin biplanes, and on the Martin-Handasyde monoplane.

His cross-country flights have been numerous and effective. The first of note was his flight from Hendon to Brighton, a very fine effort for a first attempt. Later the same day he tried to fly back, but came down near Grinstead owing to engine failure. Next day, after working on his machine without food from 8 a.m. till after 2 p.m., he started back to Brooklands, but when at a height of 3,000 feet, and within sight of the track, he was seized with one of those "hunger fits," which are the horror of all athletes, and only just managed to get to earth safely before his strength left him, after which he lay beside his machine for nearly an hour absolutely exhausted. But, having had some food brought to him, he recovered completely, and finished his journey in comfort. Such is the resilience of youth.

Since then he has flown from Brooklands to Brighton and back in an afternoon—his return being shown on the opposite page. Another fine flight was from Hendon to Aldershot and back with despatches, during the Parliamentary demonstration, at the finish of which flight he was publicly complimented by the Duke of Connaught. His most recent performance was his flight over Warwick Castle on Whit-Monday. Incidentally he has flown nine times from Hendon to Brooklands, or *vice versa*, his best time for the twenty miles being seventeen minutes.

Personally, Hamel is rather above middle height, slim, and athletically built, of the fair, Scandinavian type, and I know the fair sex finds him more than ordinarily well worth looking at. However, what I myself like best about Hamel is the serious way he takes his flying. Get him by himself and he will discuss the practical side of aviation as long as you like, and he can always give a reason for everything he does when in the air. The man who flies with a reason for his every manœuvre is the man who is not likely to damage either himself or anyone else. Consequently, I have great hopes of seeing Gustav Hamel do big things as an aviator.

Meantime, I wish him luck in the Gordon-Bennett and in the "Circuit of Britain."—C.G.G.

### Work at Beccles.

Miss Dorothy Haward writes: "On Thursday evening Lieut. Parke came down to try the machine, but Thursday and Friday evenings were devoted to testing and tuning the engine." On Saturday we had the machine out, and Captain Sanders took her for a preliminary run and short flight.

Lieut. Parke then took the helm, and made six excellent short flights in twenty minutes. He expresses himself as very pleased with the machine indeed. I think we have really roused local enthusiasm, and the town turns out *en masse* as soon as the shed doors are opened. Also we are training them up in the way they should go as regards keeping in bounds and not straying about all over the ground, and they really behave nobly now.

"We have one kind friend who acts as official cow-puncher and rounds up the stray cattle before we start. It has also been suggested that we should fix a sausage machine at the rear of the machine for any members of the canine tribe who show too great a curiosity in the working of the propeller, but, of course, that is mere frivolity.

"The latest about our engine: 'Ah, you have a very powerful engine, I see, and how much coal does she use?'

"Before closing this letter I should like to say how much we all appreciate your excellent paper down here. It is just what everybody has been wanting, and I wish you the success you deserve."

Writing later, after his first trials on the Sanders, Lieut. Parke says: "Once in the air she is ripping; feels safe, and is

beautifully steady. The under-carriage is simply magnificent, and stands anything: I should have smashed a Farman type wheel base a dozen times yesterday. The ground here is awful. Altogether I am very pleased with the machine, and have great hopes of doing some decent flying."

### An Incident at Freshfield.

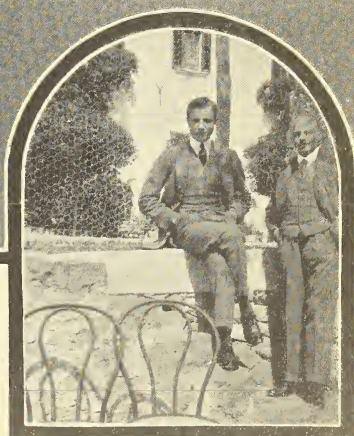
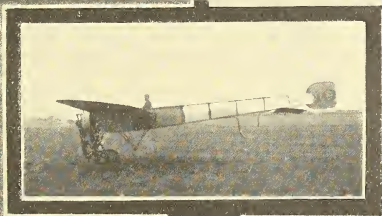
Mr. Robert King met with an accident on the afternoon of the 14th, while flying at Freshfield. Descending over the sandhills, his machine was caught by a gust and nearly overturned. Mr. King, however, kept a good hold on the machine, which descended on the rough ground, struck a hillock, and was badly damaged, the chassis being carried away. The aviator, who was making a preliminary ascent before giving an exhibition flight at Crosby, luckily escaped uninjured.

### Frey's Accident.

Frey's smash on the 13th is another example of the folly of running competition courses across mountain ranges. Frey left Turin at 5.7 a.m., and no more was heard of him after he passed Ronsgiglione, at 5.10 a.m., till he was picked up in a ditch at 7 p.m. with two arms and a leg broken. Apparently he had flown over the forests which cover the lower slopes of the Apennines, and then ran into a fog, which prevented him from seeing where he was going till he ran into the mountain side, though he probably thought he was well over the top of the whole range at that point. Flying over mountains is no more clever than is flying over houses.



# OUR AVIATORS. III.—Gustav Hamel.



- (1) As a high flier—Starling from Hendon.
- (2) As a theorist—Discussing things with Lieut. Watkins.
- (3) As himself—Taken on his return from Aldershot.
- (4) As a dutiful son—At home.
- (5) As a cross-country flier—Returning from Brighton.

## The Week's Work.

## Monday, June 12th.

BROOKLANDS.—Hunter, of Dewsbury, formerly a Goupy flier, out on Avro in morning. Stanley Adams and S. V. Sippe doing straight flights. In afternoon Lieut. Blacker made his first flight. S. V. Setti (no relation to S. V. Sippe) also making first attempts. Noel did his first circle on Avro-Farman. A. V. Roe took the Avro biplane out for trial, and Kemp made a good flight. Raynham out with passenger on Avro-Farman. Blondeau-Hewlett school bus. Abbott and Johnson in the straight flight stage. Hilliard, an American Curtiss flier, made first attempts on the school Farman, which Blondeau flew perfectly at first trial since it was recovered. Snowden-Smith out with passengers on Blondeau racer. Watkins at work on Howard-Wright-E.N.V. Pequet took Spencer as passenger on same machine. Pequet also flew the Spencer biplane. Pixton on the Military Bristol practising fancy flying, quick turning, and banking. Napier practising and improving.

SALISBURY PLAIN.—Bristol school out *iris matinale*, Fleming up with Mellersh, a new pupil, as passenger, doing figures of eight, and a concluding *vol plané* of 500 feet. Brereton making preliminary hops. In evening Fleming off across country for first time on the No. 26 Bristol, to give exhibition at Wylve, where he delighted aborigines of the Plain. Jullerot at school bus with pupils till dark.

HENDON.—Salmel, on Biériot, worn certificate in fine style, doing figures of eight at 100 to 200 feet, and finishing his *vol planés* within ten yards of observers. Dyott, Abercrombie, Balston, Capt. Hamilton, and Lieut. Maunde-Thompson all practising. Henderson tried for brevêt, but was stopped by wind. Hamel out in evening, carrying several passengers.

Driver, a new pupil, rolling; and Davies and Liles out on Farman, with Hubert as instructor. Valkyrie pupils also out, with Turner as instructor.

## Tuesday, June 13th.

BROOKLANDS.—Nothing doing. Too much wind.

## Wednesday, June 14th.

BROOKLANDS.—Abbott and Johnson out on Blondeau-Farman. Radley, making his first attempt on Antoinette, touched a wing-tip and strained wing. Sippe and Setti out on Avro.

HENDON.—Compton-Paterson up with pupil. Other pupils rolling. Valkyrie pupils at work also.

## Thursday, June 15th.

BROOKLANDS.—Lieut. Reynolds, of the "Air Company," with Lieut. Barrington-Kennett as passenger, arrived at 6 a.m. on Military Bristol, having done a non-stop flight from Lark Hill Camp, about 70 miles, against a stiff breeze, taking 2½ hours over the journey. Fine performance for a novice. Abbott, on Blondeau-Farman did his first left turn and a bend to right. Johnson doing straight lines. Adams, ready for brevêt on Avro, doing circuits. Blacker and Hunter out.

HENDON.—Compton-Paterson took up three passengers in strong wind on Farman. One, a lady, extremely keen, and determined to fly in spite of wind and pilot's warning. Very rough passage for three laps. Paterson says he was never out in worse weather. Lady passenger delighted. Driver made straight flights. Gresswell up at 1,500 feet late in evening.

## Friday, June 16th.

BROOKLANDS.—Lieut. Samson, R.N., arrived from Reigate on the new Short biplane. Had spent the night there, having flown from the Isle of Sheppey and missed his way. Eastchurch-Reigate, a remarkable flight, showing Navy not to be outflown by Army. Blondeau-Hewlett pupils busy. Abbott did two circuits for first circular flight. Hilliard, second time on Farman, did seven circuits. Hetherington and Brown as passengers now handling the lever. Hunter, Sippe, Setti, and Adams out on Avro.

HENDON.—Dyott out on Biériot, and made his first circuit.

## Saturday, June 17th.

BROOKLANDS.—Nothing doing in morning. Bad wind. Afternoon very exciting. Brooklands full of Coronation visitors from all corners of the earth, and of all colours, shapes, and sizes. Pixton made hair-raising flight of 17 minutes on Military Bristol in a wind blowing in gusts from 30 to near

40 miles an hour. Going up straight against wind, often standing still in air, rising and falling vertically 30 feet at a jump, and travelling sideways at 40 miles an hour when turning up wind. Even apathetic motorists in paddock stirred to take an interest, and to neglect bookmakers for a few minutes. Pixton finally landed sideways with the tail of his machine blown almost into the door of his own shed. Later Cody made a few circuits, and also did a straight flight with an assistant standing half-way along his left wing.

Then followed a fine flight by Lieut. Longmore, R.N., on Samson's Short biplane. Longmore is as good a biplane flier as we have got, and the new Short is a thing of beauty so far as workmanship, finish, and detail design are concerned, but it is a pity that the naval pilots, like the army, are compelled to sit in front of their machines. Why was not the late Cecil Grace's tractor-screw biplane developed? The machine is, I should say, the fastest biplane of the Farman type yet seen at Brooklands, and she handles beautifully. The chassis is of the very efficient type developed by Mr. Horace Short, and the tail differs from the ordinary Farman by having a single plane, with a rudder above and below, as in the Howard-Wright biplanes.

Snowden-Smith made a long and very pretty flight on the Blondeau racer: E. V. B. Fisher brought out the rebuilt "Henrietta," but his engine was not pulling well, and he could not turn. Conway-Jenkins did some short flights on the Avro. Raynham also did a little on the Avro-Farman, and Pixton made another appearance, but the wind was too much for everybody. Still, it showed that we are improving, for six months ago no one would have ventured out in a wind blowing at 25-30 miles an hour, and gusty at that.

Radley provided the sensation of the day by smashing up his new Antoinette. He was doing a straight flight against the wind, when a gust caught him, raised him up, and heeled him on one side. He over-corrected the warp, came down on the other side, touched his right wing-tip as the gust dropped him about 15 feet, and came a header, smashing everything except the engine and the part of the fuselage between the seat and the engine. When I went out to him at the wreck, the first thing he said was, "If I hadn't been strapped in, I'd have broken my neck." Moral: Wear a belt. It should be noted that the naval aviators all wear belts to hold them in their seats, but, in an engine-at-the-back machine, a belt may hold one in till the engine squashes one, instead of letting one be flung clear, to take the chance of breaking one's neck. Quite late in the evening Conway-Jenkins brought out the Avro-Curtiss-type biplane for the first time, and rolled.—C.G.G.

HENDON.—Driver made two circuits on the Farman, for third time on machine. Liles also at work.

## Sunday, June 18th

BROOKLANDS and HENDON.—Blowing a full gale. Nothing doing anywhere.

## Scottish Flying.

Though everything was in readiness and a large number of people who responded to the invitation sent out by the management, there was no flying at the opening of the fine flying grounds of the Scottish Aeronautical Company at Barrehead on June 3rd. The wind (twenty-five or thirty miles an hour) was too strong.

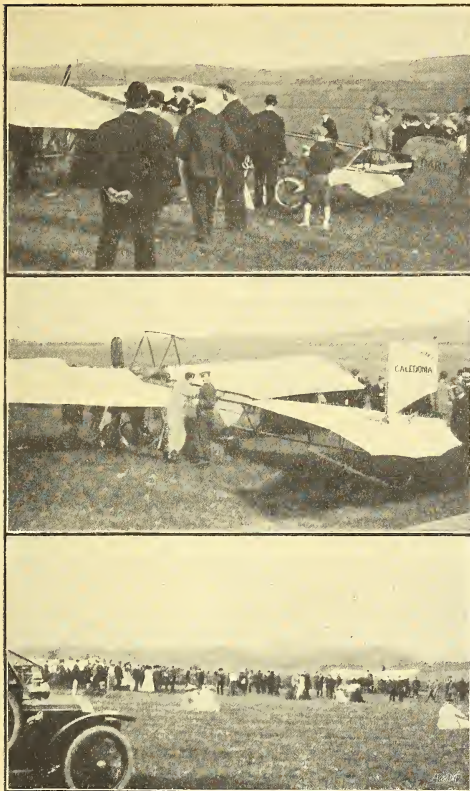
The aviators of the company—Messrs. Norman and Clin-skill—were anxious to make a trial flight, but it was considered more prudent to disappoint the people of a flying spectacle than to risk an accident.

The Biériot and Caledonia monoplanes were brought out, and Mr. Norman explained their working. The model section of the Scottish Aeronautical Society held a competition.

The Barrehead flying grounds are admirably suited for their purpose, presenting a large open space without any dangerous obstacles to low flying. An effort is being made to bring it into use in the *Daily Record* and *Mail* and *Daily Mail* flying competition. A new racing Biériot of the latest type will arrive at the ground in a fortnight or three weeks.

As may be seen from the photograph, the Caledonia monoplane is of good sound design, having sensible skids, a non-lifting tail, and apparently adequate rudder area, which is a point in which many machines fail.





**FLYING IN SCOTLAND.**—The opening of the Scottish Aviation Company's School. Above, the school Bleriot going into action. In the middle, the new Caledonia monoplane. Below, a general view of the ceremony.

#### Yorkshire Becoming Enthusiastic.

Judging by the interest aroused in Yorkshire, fanned as it is by the choice of Harrogate as the first alighting place in the "Circuit of Britain" next month, this part of the country seems likely to loom large in aviation matters in the near future. The interest is very practical by reason of the large number of Yorkshiremen who are engaged in one way or another in engineering industries.

The engineering departments of the Leeds and Sheffield Universities—the former with Professor Goodman, the eminent authority, at its head—have for many years had a numerous output of students. Locomotives and machinery of all types are at the bottom of the prosperity of Leeds, while the cutlery industry at Sheffield, not to mention the motor-building works, provides plenty of opportunity for Yorkshire engineers using their brilliance. It is only natural, therefore, that many Yorkshire brains should be cudgelled over the aero-engine. Leeds has produced a fine 50 h.p. and 100 h.p. engine, the "Isaacson," while it is the birthplace of the Blackburn monoplane which is figuring in the "Circuit of Britain."

A splendid flying ground exists at Filey, where there is an excellent ten mile stretch of sand, and other flying grounds are springing up at Hull, Ripon, and York. The owners of Ripon, Wetherby and Pontefract racecourses are putting every temptation in the way of the Yorkshire Aero Club to use their grounds, and some definite arrangement with one or more of these places for regular flights of the members will shortly be effected.

It is to stimulate the interest of aviation in Yorkshire that the chairman of the Yorkshire Aero Club, Mr. Stuart A. Hirst, has offered a prize of £50 to the first local flying man who covers the journey from Filey to Leeds, a distance of about seventy miles, on a British machine, with alighting places at Malton and York if necessary.

The Harrogate Corporation are getting to work with a will in conjunction with the Yorkshire Aero Club with the arrangements for next month's great circular flight, and a meeting of the joint committee, under the chairmanship of the Mayor of Harrogate, Captain Boyd Carpenter, was held at Harrogate yesterday (June 12th), when it was reported that two local funds were being opened and subscriptions were coming in fairly well. These funds are to defray the expenses of preparing the ground, and for awarding prizes to the fliers in this competition. It was decided to offer a silver cup, presented by Mr. Oaden, to the competitor doing the swiftest flight to Harrogate from Hendon, and a valuable cash prize to the member of the Yorkshire Aero Club in this race who was the first to reach Harrogate.

Mr. B. C. Hucks, who is chief of the Filey School, is the Yorkshire County champion in this race, and he will most probably be in competition with other Yorkshire fliers. The Harrogate Corporation have taken very great pains to see that the Stray on the day of the race is absolutely clear of cattle, or any other obstruction. Three physicians have been invited to officiate as honorary medical officers on the occasion, while the Harrogate Salvage Corps and 100 or more West Riding police will be on duty. Two military bands will provide music to while away the intervals between the arrival of the different competitors in the race.

It is expected that anything from 20,000 to 50,000 visitors will be drawn into Harrogate on this occasion. An excellent view of the flying will be obtainable owing to the extensive nature of the famous Harrogate Stray. Unfortunately the Harrogate Corporation cannot, owing to the bye-laws, make any charge to sightseers, but a temporary enclosure will be provided for the subscribers to what is termed the Harrogate Aviation Fund.

The two-seater Blackburn monoplane, fitted with a 50 h.p. Gnome engine, was completed at the Hunslet works of the Blackburn Company on June 12th, and is at Filey, where its passenger flights will be one of the features of the well-known Yorkshire coast resorts of Scarborough, Filey, and Bridlington. Four of the Blackburn monoplanes are nearing completion, and will be taken over by the pupils awaiting their turn at the school.

The chairman of the Yorkshire Aero Club and the Town Clerk of Harrogate, have been in town this week to help forward the arrangement for the hangars, and to confer with the Royal Aero Club, of which Mr. Hirst is a member, and for whom he has acted as official observer of flights.

#### "Plain" Notes.

During the week spectators were deprived of the most attractive machine on the Plain, Lieut. Cammell's own private-owned 70 Gnome-Bleriot, which was kept in its shed owing to engine trouble.

On Sunday Lieuts. Barrington-Kennett and Reynolds were out on their Bristol biplane, finishing their flights with fine *zols planés*.

On Monday morning Lieut. Reynolds went up to 2,000 feet in a few minutes, carrying a passenger. As soon as they had landed, Lieut. Barrington-Kennett went up in the machine to about 1,000 feet, also with a passenger. Captain Burke's Farman was not out, as an accident in the shed had broken his propeller; but in the evening, in spite of a gusty wind, he went out with a passenger. Captain Fulton was, unfortunately, unable to demonstrate, as he was leaving for Paris to take up his duties as *commissaire sportif* in the European circuit.

The high wind kept everyone in their sheds on Tuesday, but on Wednesday morning at 4.15 Captain Burke, accompanied by Captain Massy as passenger, started for Oxford. Half an hour later Lieut. Reynolds, piloting Lieut. Barrington-



ton-Kennett on one of the Bristols, started to follow Captain Burke, but a stiff breeze compelled them to abandon the attempt after proceeding some way. They returned via Salisbury, and got back to the sheds after a flight of about an hour. Captain Burke descended near Wantage, but eventually got to Oxford.

In the evening Lieuts. Reynolds and Barrington-Kennett were out again, but, finding the wind still against them, did not attempt the long point-to-point to Oxford.

On Thursday, soon after 4 p.m., Lieuts. Reynolds and Barrington-Kennett, with a 15 to 20 mile wind on their flank, set out for Brooklands, which they reached in a couple of hours.

On Friday the high wind rendered all flying impossible.

Owing to wind, no work was done on Friday; and those officers who had gone to Oxford and Brooklands were unable to get back.

On Saturday, Captain Massy and Lieut. Conner were out soon after 4 a.m., when the former went out for about a quarter of an hour on a Bristol, but, finding that the engine was not running well, he descended. No more work was done until the engine could be attended to. During the day the Howard-Wright purchased from Captain Maitland was got ready. The engine was run in the shed with satisfactory results. In the evening Lieut. Cammell's 70 Gnôme-Bleriot was outside the shed having its engine tested, but the weather conditions prohibited flying. Sunday produced no change in the weather, except for the worse.

The War Office has obtained the services of another aviator, Lieut. Hynes, of the Royal Garrison Artillery. As, however, this officer is abroad, some time must necessarily elapse before he puts in an appearance on the Plain. Lieut. Hynes learned to fly on a Bleriot at Hendon, where he obtained his certificate early this year.



**Charles Hubert, at Hendon, recently took up as passenger a Chinese woman doctor, who is the only Chinese woman who has ever been in an aeroplane.**

#### More World's Records.

On June 12th, at Etampes, Leblanc, on the newest racing Bleriot, with a 100-h.p. Gnôme, put up the following records:—

	10 kms.—4 m. 51 s.	Old record, Nieuport, 5 m. 7 s.
20 "	9 m. 46 1-5 s.	" " 10 m. 9 2-5 s.
30 "	14 m. 42 s.	" " 15 m. 11 2-5 s.
40 "	19 m. 37 s.	" " 20 m. 12 s.
50 "	24 m. 30 4-5 s.	" " 25 m. 14 2-5 s.
100 "	48 m. 58 1-5 s.	" " 50 m. 36 s.
150 "	73 m. 35 s.	" " Aubrun 105 m. 19 3-5 s.

Greatest speed, Leblanc 125 kms. per hour, Nieuport 119.68 kms. per hour.

It should, however, be remembered that Nieuport was only using an engine of 30 h.p., against Leblanc's 100 h.p. Aubrun was using a 50-h.p. Gnôme-Bleriot.



**TWO OF OUR BEST FLIERS.—Above: Gordon England on the Bristol. Below: Raynham on the Avro Farman.**

On the same day Nieuport put up new passenger records at Mourmelon, his times being: 5 kms., 2 mins. 52 4-5 secs.; 10 kms., 5 mins. 44 4-5 secs.; 20 kms., 11 mins. 23 1-5 secs.; 25 kms., 14 mins. 13 3-5 secs.; 30 kms., 17 mins. 2 2-5 secs.; 35 kms., 19 mins. 49 1-5 secs.; 40 kms., 22 mins. 35 4-5 secs.; 45 kms., 25 mins. 21 4-5 secs.; 50 kms., 28 mins. 9 4-5 secs.; 100 kms., 56 mins. 47 2-5 secs.; 150 kms., 88 mins. 24 2-5 secs. His average speed was 105.5 kms. per hour, and his fastest lap 108 kms. per hour.

Also on June 12th Weymann, on a Nieuport, with a Gnôme engine, flew from Villacoublay to Mourmelon in 1 hr. 17 mins., his average speed being 125 kms. per hour, or about 75 miles per hour.

On June 16th Nieuport got his records back again, driving a 70 Gnôme-Nieuport, his times being: 5 kms., 2 mins. 18 2-5 secs.; 10 kms., 4 mins. 37 1-5 secs.; 20 kms., 9 mins. 14 3-5 secs.; 30 kms., 13 mins. 53 4-5 secs.; 40 kms., 18 mins. 31 2-5 secs.; 50 kms., 23 mins. 10 secs.; 100 kms., 46 mins. 27 2-5 secs. Best speed, 130.57 kms. per hour, equal to 81 miles per hour, round a 5-km. circuit.

## The British Federation of School Aero Clubs.

By ROBERT P. GRIMMER, General Secretary to the Federation.

The future of aviation rests with the coming generation. With the exception of a small band of devoted enthusiasts, the great mass of our fellow-countrymen are totally oblivious to the immense importance of this new science, the influence of which on the history of the world will probably be greater than that of any other discovery of modern times. Air-power means world-power, and the country whose air fleet is supreme is the country that will control the future destinies of our planet.

The future rests with the younger generation, and to that end the British Federation of School Aero Clubs has been formed.

Britain's leading aviator, Mr. Claude Grahame-White, has accepted the presidency of the Federation, which numbers among its vice-presidents many leading men in the world of aviation, including Mr. Howard T. Wright, Mr. A. V. Roe, and Mr. T. W. K. Clarke. There is scarcely an aeronautical firm in the country that has not promised support to the movement.

The objects of the Federation are: (a) to encourage the general formation of school aero clubs, (b) to promote the sports of kite, model-aeroplane, and glider flying among schoolboys, (c) to link together, under central organisation, the clubs already existing, (d) to organise inter-school contests, (e) to offer prizes for scale drawings, scale models, inventive ideas, essays, and scientific research generally, (f) to assist boys displaying special aptitude to enter the aviation profession, (g) to educate the rising generation to a sense of the immense importance of air-power.

At the time the Federation was formed there were scattered about in various parts of the country approximately a dozen school aero clubs, each working independently of the rest and on quite individual lines. It was essential for the well-being of the movement to federate these under central control, so that each club could work in unison with the rest, and pursue a definite policy. The inter-club contest follows as a matter of course, and these contests should attract at least the same amount of attention as cricket and football matches. These latter sports are only kept alive by inter-club games, which, in their turn, are arranged by associations and leagues.

Let it be at once understood that the promoters of the Federation have not the least wish to abolish the standard school sports, but what they do want is to get at least a few boys in every school to form an aero club.

The President of the Federation, Mr. Claude Grahame-White, has addressed a circular letter to the principals of some hundreds of the leading schools of this country, from which I quote the following extract:—

"In France, Germany and Austria the school aero club movement has made immense progress, and the school authorities of those countries are lending willing aid to the organisers.

By means of the kite, the flying-model, and the full-sized glider valuable discoveries may be made for aviation, and the work is full of interest. It supplies an ideal form of recreation, and, with its demand for a practical knowledge of physics, mathematics, and several handicrafts, is of enormous educational value. The school sports are not likely to suffer by the formation of an aero club. By means of the man-carrying glider actual flight can be accomplished with a minimum of risk, and experiments may be made that will react very materially on the design of the aeroplane. In view of the lamentable apathy displayed towards aeronautics by the nation in general, I sincerely hope that you will be good enough to give the matter your serious consideration, for the future of aeronautics rests in great measure with the coming generation."

The arranging of competitions, not only in connection with kites, models, etc., but also with regard to essay writing, draughtsmanship, and new ideas, will be a very important duty of the Federation, and valuable prizes have already been offered by practical supporters of the movement.

A Council that will govern the policy of the Federation is in course of formation, and an active campaign of propaganda work has already commenced. Donations to the campaign and prize funds are very welcome. They should be sent to me at 15, Arlington Road, Surbiton, and will be duly acknowledged in the columns of *THE AEROPLANE*. May I appeal to every sympathiser with the movement to do his best to help on the work, which, as I have already pointed out, is of national and imperial importance?

I hope to address the pupils of every large school in the country, but I am grievously hampered by the attitude of the various educational authorities. I also receive many letters like the following: "Owing to the terrible risks incurred in aviation, many of my little fellows' parents would not like them to attempt experiments even with model aeroplanes. I find that it would not be at all popular to introduce the subject." This was written by a prominent and influential English headmaster.

It has been suggested to me that the Federation should arrange demonstrations of model aeroplane flying at some of these sports, especially in parts of the country where no aeroplane has yet been seen. If any organiser of sports—school or otherwise—wishes to include model aeroplane flights in his programme I shall be obliged if he will let me know.

Little more remains to be said. The Federation has been formed, its work is distinctly mapped out, and I think we can assume that it has a great future. Disappointments may arise, there may be temporary checks, bigotry and conservatism have to be fought, but we shall still press on to our goal.



Vidart starting in the Circuit of Europe—Note the assistants just letting go.



## The Hanriot Monoplane.

The Hanriot machine is not, in England, as well known as it should be. This is doubtless due to the fact that the firm of Hanriot has not exerted itself particularly in competitions.

During the past year, however, an immense amount of work has been done at the Hanriot school at Reims, where M. Hanriot père, an aspirant for the *championnat des poids plumes* (he weighs about 16 stone), has been steadily doing cross-country passenger flights on a standard machine with a 100 h.p. Clergét engine.

There has, as a matter of fact, been a Hanriot "Libellule" (single seater) at Brooklands for a year, but it has only lately done itself justice; since, in fact, its proper engine (40-55 Clergét) was fitted by the George England School.

During the last two months the machine has been working very hard getting *brevets* for pupils, and doing good flights with the school pilot, Mr. E. V. B. Fisher, on board.

The machine is distinguished for its steadiness in flight, and for the solidity of its construction. In view of this latter point, it is astonishing that the weight of the machine should be as low as it is (672 lbs. without pilot).

The planes are of the usual double-surfaced type, with rounded ends, the leading edge being sheathed in aluminium. An interesting point is the "kingpost" on the rear spar, which keeps the spar as a whole quite stiff, while allowing it to play about its hinge joint with the fuselage. The wings are supported from a "cabane" and from the chassis.

The fuselage is, to all intents and purposes, a long and narrow carvel-built boat. It is decked over aft of the engine, has a cockpit for the tanks and pilot, and is fabric covered aft, except that for the two feet aft of the pilot's seat the decking is extra solid, to afford a resting-place for the pilot's feet on the way to the seat.

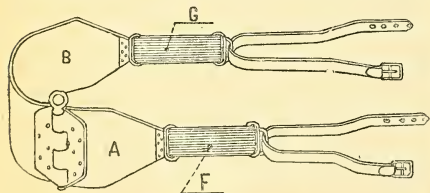
There is a large empennage, part flat and part at a slight angle (1 in 13), behind which are the two elevator-flaps.

### Aviators' Belts.

On various occasions and in many places the writer has vehemently declaimed against the folly of aviators who allow themselves to have their necks broken by being pitched out of their machines on to their heads, or to have their legs broken by being shot forward into the front of their machines.

There is no particular objection to a man breaking himself if he really wishes to do so, but when he has a lingering prejudice in favour of remaining in one piece it is sheer foolishness of him not to take even the simplest precautions.

Herewith are shown two types of belts which have saved many lives and limbs. That shown on René Labouchère's Antoinette is exceedingly simple, being only a padded strap, but it has the disadvantage that, being inextensible, it is apt to give the pilot's waist a bad shock in the case of a head-first dive, or it may break and let him drop on his head, or, as in Latham's smash at Brooklands, the whole back of the seat may pull away bodily from the deck.



as 8 The R.E.P. Belt with quick detachment device.

A superior form is that used by the R.E.P. pilots, and shown in the detail sketch. A and B are two broad pieces of chrome leather connected by a simple steel link through which is dropped a pin. In the event of the machine turning over on top of the pilot he can draw the pin with either hand in a fraction of a second and release himself. It will be noticed that the link is well round one side, where it is not likely to bruise the pilot. G and F are rubber cords, similar to those

There are two small fins, above and below the fuselage, and one rudder. In all these auxiliary surfaces the fabric is strained over piano-wire edges.

The chassis is a very strong construction, which, though eminently satisfactory in practice, might, we think, be considerably lightened, and also be made to offer less head resistance, without impairing its efficiency. The fuselage is supported by three pairs of struts from the skids, which are nearly straight. One pair of wheels is mounted on a strong axle, which latter runs in vertical guides on the skids. The axle is controlled in the guides by rubber-tension springs.

The control is somewhat peculiar. The pilot has on his right a lever with fore and aft motion, which controls the elevator; on his left a lever with a transverse motion, which warps the wings. The rudder is controlled by a foot-bar. This control, while excellently simple, and very sweet in action, has the disadvantage of involving the use of both hands. But in practice, the machine is so steady that the pilot can let go of the warping lever, and can, in fact, make circuits by the use of the rudder alone.

The Clergét engine is new to this country, but we may hope to see more of it. It is a four-cylinder water-cooled engine, and weighs, with carburettor and magneto, 185 lbs.; the radiator weighs 15 lbs. Thus we have a weight of 4 lbs. per full load h.p. The engine is guaranteed to develop 55 h.p. for three hours at 1,600 revolutions. It normally runs at 1,300 revolutions, but Mr. Fisher informs me that when he opens his throttle, the engine mounts to 1,500 at once.

In conclusion, I beg to thank Mr. Fisher (and, I trust, readers of the AEROPLANE also do so) for his kindness in allowing me to infest his hangar with a foot-rule and a stock of nasty questions. In return I wish him the best of luck and weather, and a pleasant sufficiency of pupils, for, I may say, he has been very successful in the training of pupils.

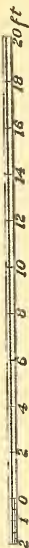
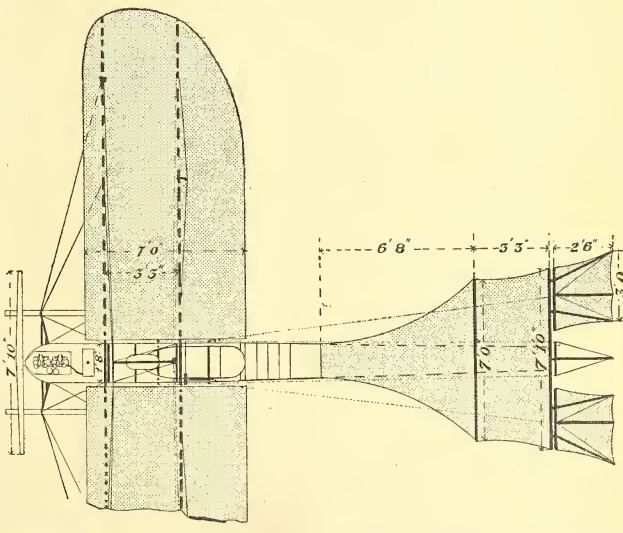
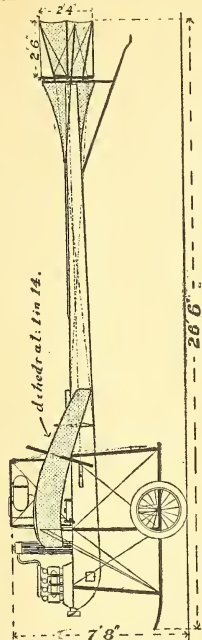
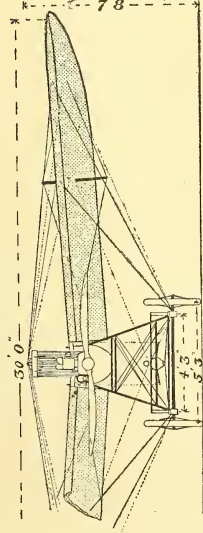
used in several well-known "exercisers," and these are anchored by straps to the fuselage of the machine itself.

Far the greater number of serious accidents happen through dives of only a few feet, and many while machines are actually running on the ground. Practically all these could have been rendered innocuous by simply sitting behind the engine and wearing a belt. There are very few cases indeed on record of machines falling from any considerable height.



Labouchère on the Antoinette, showing safety belt.





## HANRIOT MONOPLANE.

Surface of Main Planes:	170 sq. ft.
" " Empennage	48 "
" " Elevators	14 "
" " Rudder	4½ "
" " Fins	2½ "

Weight (without Pilot) 672 lbs. Speed about 50 mph

Engine: Clerget, 40-55; 1300 rpm

Propeller: Chauvière, 7'10" diam x 4'5" pitch.

165

### The Vickers-R.E.P. Engines.

It has for some time been known that Vickers, Ltd., had taken over the British rights of M. Robert Esnault-Pelterie, and that Captain H. F. Wood, one of our best aviators, had been placed in charge of the aviation department, with Mr. A. R. Low, another practical flier, as chief engineer. The combination should be a strong one, and, with the great constructional capabilities of Vickers, Ltd., to draw upon, the aviation department should turn out some very fine work.

The latest Vickers-R.E.P. monoplane should make its appearance before long, and something very interesting in the way of high-speed machines is promised.

Meantime, the R.E.P. racer has been distinguishing itself highly in France, Amerigo, in the French eliminatoires, having covered the Gordon-Bennett course in a stiff wind at a speed of 120 kms. per hour, i.e., about 73 miles per hour. Captain Wood, who called on *THE AEROPLANE* on his return from France, gave the interesting information that a 60-h.p. R.E.P. engine had just come successfully through a full-power bench-test of 10½ hours, a really remarkable performance, especially for an air-cooled engine.

### A Useful Pressure Indicator.

Brown Brothers, Ltd., the well-known makers of motor accessories, are supplying a number of accessories for aero work. One little apparatus which deserves special mention is the "Okill" pressure indicator, which gives very simply either the compression or the explosion pressure of a petrol engine. Anyone who has had the job of tuning an aero engine will understand what a useful article this is.

### Useful Accessories.

Mr. Narraway, who represents Chauviere propellers, informs us that he has arranged that there shall be a stock of standard "Integral" propellers at each landing ground during the big races of this year.

*THE AEROPLANE* has recently had an opportunity of examining some of the tools, etc., supplied by Messrs. Goodchild and Partner. An especially pleasing example of fine work is the S.K.F. ball thrust-bearing. This, being self-aligning within wide limits, is very suitable for aero work, where it is so difficult to obtain absolute rigidity; it has the further advantage that it can instantly be resolved into its component parts without any tools whatever. Other specialities are a hacksaw which can, without breaking, be bent till the ends touch; a twist drill, which costs 30 per cent. less than the ordinary, and is claimed to do about twice the work; and a spanner, of which the head only moves, so that it can work on nuts placed in the worst position of which even an inventor could think.

### Avro Amphibians.

Commander Schwann, who recently had a trip in the Avro biplane, has ordered one, which is to be fitted with floats to enable it to rise from and alight on water. The Avro-Curtiss which has been made by Messrs. A. V. Roe and Co., is also to go away shortly to be fitted with floats.

### An Aerial Highway.

Quite an aerial highway is being made between Bristol and Brooklands via Amesbury and Farnborough, this route having been traversed, wholly or in part, by Gilmour, Réard, Tabuteau, Jullerot, Captain Fulton, Captain Burke, Lieuts. Cammell, Barrington-Kennett, and Reynolds. The two longest flights over it without landing were made by Lieut. Reynolds, with Lieut. Barrington-Kennett as passenger, from Amesbury to Brooklands, on Thursday, June 15th, and by Jullerot, on June 10th, from Bristol to Amesbury, crossing over Badminton. Jullerot flew "Bristol No. 47," and covered 67 miles at a height of between 2,000 and 3,000 feet. The two officers flew one of the Military Bristol, and covered about 70 miles.

### The Ingenious Engineer.

Some engine manufacturers are really very ingenious. Undoubtedly one of the reasons for the success of the Gnome engine is that those who use it take it practically to pieces and clean it with the most minute care after every few hours run, and this presumably because it is an engine of a type entirely different from anything else in existence. The ordinary type of engine which looks like a car engine (as most of the British-made engines do) is treated like a car engine, which accounts very largely for the fact that the users do not get full power out of them when they have been in use

for a few weeks without being thoroughly cleaned out. Consequently, one ingenious French manufacturer has designed his engine so that it is absolutely impossible to get at the exhaust valves for the purposes of grinding, cleaning, or spring adjusting without taking the cylinders off. This ensures that the engine shall be completely dismantled after a few hours' running, and so be thoroughly overhauled. The result apparently is that this particular engine has now got a reputation abroad second only to the Gnome itself.

### The Aero-Models Association.

(WESTERN BRANCH.)

This branch is holding several model competitions in the near future, and the Secretary would be glad to forward particulars to anybody interested and likely to compete. The flying ground is excellent, and long distance fliers will have every opportunity of showing what they can do.

On July 22nd, a competition is being held for models rising from the ground; no restrictions as to weight or surface. Particulars can be had from Mr. A. P. Wilkin, of 22, Burnaby Gardens, Chiswick, W., who has presented a very handsome prize, or from Fredk. Rogers, 27, Noel Road, Acton, W.

(SOUTH-EASTERN BRANCH.)

The Secretary writes:—"We think we can boast that this is the premier branch of the Aero-Models Association, it being the first branch formed, far ahead in the work we have done, and having most members. During the winter months we held fortnightly meetings, when a series of very interesting papers were read, both by amateurs and professionals. We have a good flying ground at Kidbrook, where competitions are held, and it is well patronised every day by members as a practice ground. We have arranged a programme of open flying competitions, etc., to be held during the summer months. This will be sent on application. Wishing you and your new weekly every success.—WILLIAM H. RANSLEY, Hon. Sec.

### Conisbrough and District Aeroplane Society.

Our club is in a better condition than ever before, having a membership of about 36. We have a glider, given us by the late Sheffield Aero Club. It is 42 ft. long, and we are hoping to have it out by Coronation Day. The glider requires a little building up yet. I may say that practically all the members make models which fly.—T. S. WALLIS, Sec.

### Flying in Germany.

Much good flying has been done in Germany lately. Lindpaintner, Latzsch, von Mossner, Dr. Wittenstein, Jahnow, Grade, Schauenberg, Kahut, Hoffmann, and Buchner have all been doing a tour of Saxony, and after flying from Chemnitz to Dresden took part in height competitions. Hirth, Mackenthun, Wetterstaedter, Jeannin, Brunhuber, Werntgen, Foerster, and others have been flying a circuit of the Upper Rhine, taking in Baden, Karlsruhe, Weissenburg, and Strasburg. Germany is already getting ahead of this country so far as cross-country flying is concerned.

### A Few More Opinions.

R. F. Macfie (Certificated Pilot).—"It is a jolly good paper. Even I, a Scotchman, am glad to buy it every week.

C. C. Turner (certificated aviator), writing in the *Observer*, says:—

"The appearance of the new aeronautical weekly journal, *THE AEROPLANE*, is most welcome. Perhaps the most distinctive of many good qualities is its treatment of practical flight questions by practical men and theorists, as, for instance, last week's discussion of the *vol piqué*. But it is also very important that there should be a flight journal that pursues an independent policy, not for the sake of opposition, but, on occasion, for purposes of free criticism and open discussion."

C. F. Cudworth, Esq. (hon. secretary, the Sheffield Model Aero Club).—"Your paper is one of the best I have seen at the price, and you seem to get the photographs quite clear."

A. V. Roe (certificated aviator): "Congratulations. Many people will look forward each week to *THE AEROPLANE*. It is amusing, interesting, and instructive."

**E. T. WILLOWS LTD.**  
**AERONAUTICAL ENGINEERS**  
**SPECIALITY: WILLOWS' DIRIGIBLES**  
**4-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM**



**L**ANARK AERODROME, Lanark, N.B.—Tuition by  
 Certificated Aviator on genuine Blériot Monoplanes;  
 Passenger Flights and Flight Exhibitions.—Terms  
 on application to W. H. EWEN.

### AEROPLANE MATERIALS.

#### PETROL MOTORS.

Wire-Strainers, Wheels, Eyebolts and, all Accessories,  
 both Model and Full Size.

Illustrated Catalogue, 4d.

**S. SUMMERFIELD, AERONAUTICAL ENGINEER.**  
**MELTON MOWBRAY.**

**A**EROPLANES, motors, castings, engines from 10 H.P.,  
 woodwork, coverings, castings, propellers (below);  
 quotations; many second-hand. Miniature aeroplane  
 motors, part machined, 9/9; many sizes, cheap (below).  
 Illustrated list, 4d.—LITTLEOVER WORKS, DERRY.

**A** RESPONSIBLE position is vacant in an old-established  
 firm of Aeronautical Engineers with flying  
 grounds, machines, and several valuable patents.  
 Salary, £200 to £300 per annum, according to investment.  
 Strictest investigations. Solicitor's or Banker's reference  
 required.—Write MALLOWS & Co., ADELPHI HOUSE,  
 STRAND, W.C.

**50** H.P. ALVASTON for sale, perfect condition, fresh  
 from makers; replacing by more powerful type;  
 price £95.—MALLOWS & Co., ADELPHI HOUSE,  
 71/72, STRAND, LONDON, W.C.

### CLIFT'S AVIATION MAPS.

**A Necessity to Cross Country Fliers.**

Prices (according to country covered) on application to  
 Eric Clift, c/o "The Aeroplane," 166, Piccadilly, W.

#### Coming Events.

##### AEROPLANE COMPETITIONS.

- June 27.—European Circuit competitors at Shoreham.
- " 28.—The competitors at Hendon.
- " 29.—Return to Shoreham.
- " 23-27.—Kiel-Berlin.
- July 1.—Gordon-Bennett Race (Eastchurch).
- " 1.—Berlin-Hanover-Berlin.
- " 22.—Start of Daily Mail "Circuit of Britain."
- Aug. 5.—Finish of "Circuit of Britain."
- " 5-21.—Circuit of Belgium.
- " 13-15.—Marseilles-Algiers.
- Sept. —Paris-Bordeaux-Paris.
- Oct. —French Military Competition (1,200,000 fr.).
- " 31.—Last day for British Michelin Cup Flights.
- Dec. 8-25.—Paris Aero Show.

##### MODEL COMPETITIONS.

- June 17.—Parkside Aero Club Model Competition, Harrow Road.
- " 17.—Aero-Models Association, South-Eastern Branch Model Competition, Mitcham Common.
- " 28.—Sheffield Model Aero Club General Meeting at Stanlands Restaurant.
- July 1.—Kite and Model-Aeroplane Association Steering Competition, Drapers' Company's Ground, Leyton.
- " 5.—Kite and Model-Aeroplane Association Wakefield Cup, Crystal Palace.
- " 11.—Kite and Model-Aeroplane Association Steering Competition, Crystal Palace.

## EVERYTHING HALVED BUT EFFICIENCY

The initial outlay and running  
 expenses are cut in half by the

**1  
 2**

**AVRO  
 BIPLANE**

Complete with 30 h.p. Green, £600

Cheaper than any other successful machine.  
**SMALL AND COMPACT.**

Two or three Avros can be housed in a shed  
 which will only hold one ordinary biplane.

**A. V. ROE & CO.,**

The Aviator's Storehouse,  
 Brownsfield Mills,  
 MANCHESTER.

Aug. 12.—Kite and Model-Aeroplane Association Gamage Cup.  
 " 20.—Kite and Model-Aeroplane Association Self-Launching Models, North Ealing.

## The Aeroplane.

166, Piccadilly, W.

Telegraphic Address: AEREX, London.

Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any  
 part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
	s.	d.		s.	d.
3 months, post free	3	8	3 months, post free	2	9
6 "	3	3	6 "	5	6
12 "	6	6	12 "	11	0

Cheques and Post Office Orders should be made payable to The  
 Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee  
 only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE  
 from local newsgasters, each issue can be obtained direct by forwarding  
 remittance as above.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

WEDNESDAY, JUNE 21st, 1911

No. 3.



Builders of the Celebrated

*"Bristol"*  
*Aeroplanes.*

As supplied to H.M. War Office  
:: and to the Russian Army ::

Sole Agents in Gt. Britain & the Colonies  
for the famous "GNOME" Engines

The Company's Flying Schools, at Salisbury Plain,  
Brooklands, and Eastchurch, are the finest in Gt. Britain

PERMANENT STAFF OF  
15 CERTIFICATED PILOTS.

Special Terms to Navy & Army Officers.

The British & Colonial Aeroplane  
Company, Ltd.,

Clare Street House :: :: BRISTOL

Telegrams—  
Aviation, Bristol."

Telephones 2 P.O. 1  
74 National. 3074 National.



A Bristol Aeroplane over the Avon Gorge.

"THE AEROPLANE," JUNE 29, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, JUNE 29th, 1911.

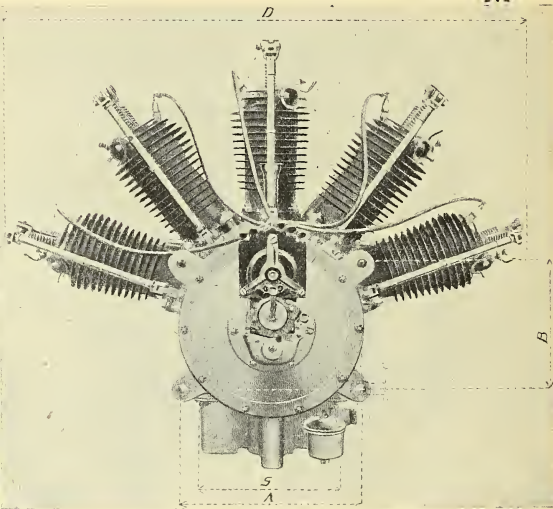
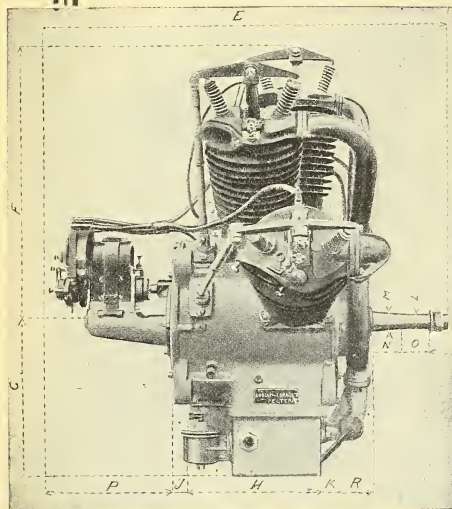
No. 4

Going Strong.



Pixton, on the All-British Bristol with E.N.V. engine, putting up a handsome lead in the Manville Prize Competition at Brooklands on Saturday last. He was the only man to fly in England on that day, so far as can be learnt

# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40/50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

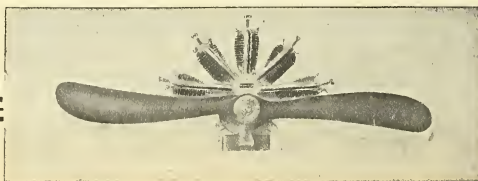
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	7.1"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.57"	1.96"	2.67"	10.9"	3.9"	2.68"	9.84"	83"	
60 H.P.	14.15"	10.25"	7.9"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	3.9"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL OPINIONS ... ..	75
THE CIRCUIT OF EUROPE ... ..	79
LOOKING FORWARD (W. O. Manning) ... ..	82
AIR CURRENTS ... ..	83
PROSPECTS FOR THE GORDON-BENNETT ... ..	84
THE WEEK'S WORK... ..	85

	PAGE
GLIDING AS A BRANCH OF THE SPORT (Horace W. Vaughan) ... ..	88
THE COMPARATIVE EFFICIENCY OF AEROPLANE TYPES ... ..	89
THE VALKYRIE MONOPLANE ... ..	90
CORRESPONDENCE ... ..	93

## Editorial Opinions.

**What is the Use?**

A feeling is growing among aeroplane constructors, and among some of the more thoughtful aviators, that these big competitions, such as the European Circuit, the Circuit of Britain, Paris-Rome, and so forth, are really doing more harm than good, and there are certainly good reasons for thinking thus.

The prime reason for a competition, if it is to do any lasting good to anyone, should be that it has the effect of developing our machines in a practical way, and of increasing our knowledge of the subject. As a matter of fact, these competitions do neither. The machines produced are merely built to fly at a very high speed for a long while, and in some cases they are deliberately built so that certain parts are easy and cheap to break and renew.

In the rush caused by the preparations for the competitions machines are put through the works in a hurry, all exactly alike, and consequently experiments with new and improved types are neglected, or scamped. The same rush causes scamped work, which causes serious accidents. Also, the firms' own teams of pilots receive all the attention and help available, so that private buyers are neglected, and become disgusted with the sport. And, above all, the competitions divert money into the wrong channels, so delaying development all round.

For proof of these statements we have only to look at the start of the European Circuit. We see Lemartin a serious experimenter, but, burning to distinguish himself, allowed to start on a machine of an untried type and kill himself. We see Morison and Valentine only getting their machine delivered the night before the start. We see Valentine's machine deprived of essential parts which are given to members of the official team. We see Morison, Valentine, Loraine, and Radley tempted by the extremely remote prospect of winning the Circuit of Britain single-handed against the teams which will be sent over by the rich foreign constructors, spending thousands of pounds abroad on foreign machines when they could certainly buy machines just as good at home, if they would go to the right people for them. And we see thousands of pounds more being spent abroad on engines when it ought, by rights, to be spent in this country.

All these thousands do not advance our knowledge of aviation in the least, for the racing machines are merely those of existing types built smaller and lighter. In one respect only are they improvements on previous machines, and that is in the diminution of head-resistance. Even this has, in many cases, been achieved simply by cutting away the landing chassis till it is quite useless for landing on rough ground, and has to be replaced after a few landings on good ground. No advance has been made in the direction of acquiring lateral or longitudinal stability. Nothing has been done to reduce head resistance without reducing efficiency in other respects. Nothing has been done to increase the safety of the pilot. In fact, all the energy of the constructors has been turned on to achieve more speed and more fuel capacity, and this has been done at the expense of everything else. That is all the big prizes have done.

**What is Needed.**

It may be said that, at any rate, the big prizes have done much to popularise aviation among the masses. Let it be granted that it has. The net result may be that the masses buy more halfpenny papers to read of "Holocausts of Airmen," or "Airmen's Battle with Eagles," but the masses do not buy aeroplanes, or frequent aerodromes, or become pupils at aviation schools. The movement is progressing in spite of the daily Press—with the honourable exception of a few journalistic specialists who are doing good work, and whose work would do more good still if it were not negated by the ignorance of the average sub-editor. The movement is progressing because people with brains but little money, people with money but few brains, and a certain number of people with both money and brains, are taking a scientific or sporting interest in it. They are spreading the interest among their friends, and through them the movement will become great.

But what are really wanted are improved machines. Machines must be made faster certainly, but they must also be made safer. They must be capable of landing on reasonably rough ground without either upsetting or smashing—as one of the conditions of the French military tests for next October insists. They must be designed so as to have a reasonable amount of automatic lateral and

longitudinal stability, which is comparatively easily achieved, though, strangely enough, the machines most successful in competitions hitherto are absolutely lacking in this respect. They must be designed so as to have a fair chance of landing by themselves without smashing to pieces, if a control goes wrong, or if a pilot loses consciousness. They must be made, or fitted, so that they cannot catch fire if they hit anything, and break in a very rough landing. They must be very much cheaper to buy, and they must be very much cheaper to run.

All these desiderata could be easily attained but for the craze for long distance circus performances.

A prize such as the Manville Prize, which encourages men to fly on a certain number of fixed days in the year, and encourages them to stay in the air as long as possible, does more to develop machines than all the newspapers' thousands put together. Also the continuous flying week by week actually popularises aviation more than one wild delirious helter-skelter dash from place to place with nothing to follow it. Yorkshire is setting a good example by putting up prizes for local flights from place to place. What the sport wants now are more prizes for place-to-place flights, but with conditions attached that they must be done on a certain number of fixed days, and on machines which fulfil certain conditions as to landing ability, speed, and area in proportion to power employed. Safe and efficient machines are needed. Not freak racers.

Elsewhere in this issue will be found a paragraph reminding intending entrants that the entries, for the "Alexander" Prize Competition, for the "Alexander" Prize close on the 30th inst. It is sincerely to be hoped that

#### The Circuit of Britain Course.

Mr. Herbert Thomas, who flies a Bristol, and has just completed a car tour of the *Daily Mail* course to study the country, writes:—"Just a line as promised to let you know a few of my impressions of the *Daily Mail* course.

"From Hendon right up to Newcastle is pretty fair sailing, with good landmarks, etc.

"From Newcastle to Edinburgh is too awful for words, and I should strongly advise anyone, if there should be the slightest wind, to go round by the sea.

"When one is on top of the Cheviots one can see nothing but sort of sugar-loaf hills, with absolutely no landing ground at all. Some parts of the ground look quite good, but in reality are death-traps; for these little lawns suddenly

this competition will be well supported. Generous in its inception, and far-sighted as to its conditions, it is a competition in every way worthy of support; and now that our country is beginning to take an intelligent interest in the manufacture of aeroplanes, we may hope to see some really good performances.

When one examines the results of last year's competition, one sees that whereas the various "obstacle race" tests were well withstood, the "marathon" test of a twenty-four hours' straight run proved very difficult. This is bound to be so while makers, in the effort to make a light engine, run at very high speed and compression.

It would seem that now, when aeroplanes have proved their weight-carrying capacity, there should be an opening for a motor which, while designed and built for lightness, runs under somewhat easier conditions. It would naturally be slightly larger than the present type, but its materials would be subject to stresses not only intrinsically less, but also less fatiguing. Such an engine would, in addition, to its longer life, be easier to start, and would give a much more regular torque on the propeller, for with a lower compression the impulse becomes more of a push and less of a punch. As an engine designer would put it, the pressure curve falls much more slowly during the explosion stroke. Also, a low compression engine is easier to cool.

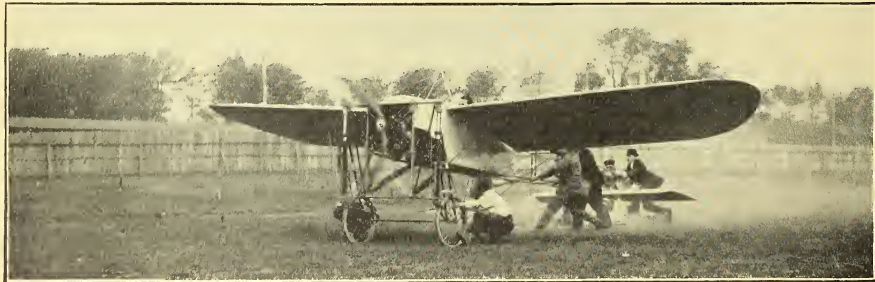
Most of the power on the aeroplane of to-day is wasted in head-resistance and inefficient propellers, and if the machines were more carefully designed it would be possible to fly without overloading even present-day engines. None the less, the engines have not reached finality, and so the "Alexander" tests are much to be commended.

drop away sheer for about 20 or 30 feet. This sort of thing goes on more or less until Scotland ceases, and one reaches Carlisle.

"After Carlisle, right to Bristol is quite good going and ought not to present any difficulty.

"From Bristol to Exeter is rather wooded, as is Exeter to Yeovil—but afterwards, as you know, *ça va bien*."

Mr. Thomas' advice to keep to the coast-line from Newcastle to Edinburgh is particularly worthy of note. A fall among the Cheviots or the hills in the Lowlands of Scotland probably means a bad smash, and much difficulty in finding a starting place after repairing, whereas sticking to the coast-line only means losing a little time on that stage, with the practical certainty of getting through.



STRENUOUS STARTING.—Sopwith taking up a passenger on his 70 h.p. Bleriot just before his smash.

THE . . .  
**SANDERS**  
**Aeroplane Co.**

---

THE SANDERS  
**Aerial Cruiser**

Fitted with  
SANDERS PATENT AERIAL GUN  
For Naval and Military Purposes.

Designed for **Rough Weather**

**Rough Usage**

**Rough Landing**

---

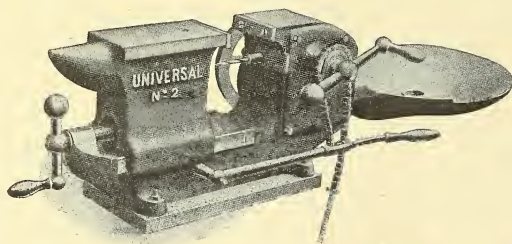
Machines built to rise from or alight on water.

**Works & Flying Ground - BECCLES, SUFFOLK.**



*The* **UNIVERSAL**  
**AVIATION CO., LTD.**  
 166, PICCADILLY, W.

**"The UNIVERSAL" Combination Tool.**

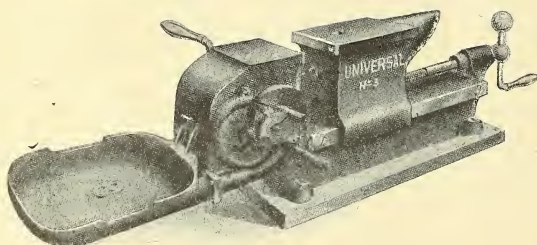


No. 2.

Price, complete with  
 Patent Lever,

**£12 6s. 0d.**

REX 51



No. 3.

Price complete

**£16 16s. 0d.**

**"THE UNIVERSAL"** is composed of the following:—Anvil, Vice, Brazing Pan, Cutter, Drill, Tube Vice, Emery Wheel, Beak.

The No. 3 model is the more powerful one, but the No. 2, weighing only 155 lbs., is the more popular with aviators, being used by the War Office, Howard T. Wright, O. Morison, Tabuteau, Tétard, Gordon England, etc., etc.

**"Birdling" Fabric** : made of a new fibre. This fabric is hardly stretchable, and is untearable. 28½ in. width. Price per yard, 3/6.

A Special Discount of 10 per cent. will be given on all orders received during the current week only, and mentioning *The Aeroplane*.

## The European Circuit.

SOME EXCLUSIVE INFORMATION ABOUT THE "STANDARD—LE JOURNAL" RACE.

## Notes on the Flying Day by Day.

The following is a complete list of the arrivals at Liège on Sunday and Monday of last week:—

1. Vidart (Deperdussin), 3h. 13m. 27s. 2. Vedrines (Morane), 3h. 38m. 3-5s. 3. Veymann (Nieuport), 3h. 55m. 16s. 4. "Beunmont" (Bristol), 4h. 2m. 45s. 5. Barra (M. Farman), Panhard motor, 4h. 3m. 34 1-5s. 6. Duval (Caudron), 4h. 31m. 49 3-5s. 7. Garros (Bleriot), 5h. 3m. 1 1-5s. 8. Renaux (M. Farman), Renault motor, 13h. 56m. 9. Kimmerling (Sommer monoplane), 22h. 44m. 35 2-5s. 10. Tabuteau (Bristol), 23h. 58m. 40 4-5s. 11. Prévost (Deperdussin), 24h. 8m. 51 3-5s. 12. Wijnmalen (H. Farman), Gnôme motor, 24h. 18m. 15s. 13. Verrept (Morane), 25h. 4m. 40s. 14. Gibert (R.E.P.), R.E.P. motor, 25h. 8m. 15s. Amerigo (R.E.P.), R.E.P. motor, 25h. 12m. 40 1-5s. 16. Bathiat (Sommer monoplane), 25h. 50m. 54s. 17. Le Lasseur (Bleriot), 26h. 23m. 34 1-5s. 18. Train (Train monoplane), 36h. 35m. 54 4-5s.

The others on Monday were situated thus:—Contenten, near Liège. Bobba, stopped at Sainte-Menehould (Meuse). Gaget, sprained knee at Moha (Ardennes). Pascal, at Châlons-sur-Marne (Marne). Valentine, at Reims. Comte d'Hespel, at Reims. Lorian, at Gruyères (Ardennes).

The following were returned as having retired:—Molla, smashed at Chelles (S.-et-Oise). Morin, smashed at Chevon (Belgium). Morison, smashed at Gagny (S.-et-O.). "Dalgier" (Lieut. Gaubert), smashed, and broken leg, at Longpont (Aisne). Allard, smashed at Savigny (Ardennes). Bill, smashed at Reims.

No definite news, beyond that they had stopped, of Tétard, Labouret, Kuhlring, de Nissolle, Charlin, de Laet, de Romance, Bielovucic.

Wiring from Reims, on the 20th, to THE AEROPLANE, Mr. Dolphin said: "Valentine flying Reims Brussels Wednesday. Aubrun attained 125 kms. an hour in Deperdussin racer at Reims in 30-mile wind." Evidently the Deperdussins are going to be worth watching for the Gordon-Bennett, for Aubrun's speed must represent something over 80 miles an hour.

Gaget, on another Morane, started from Vincennes on the Monday morning to get to Reims, and damaged his machine landing at Mezières shortly after.

Tabuteau, on his Bristol, on Monday morning had quite a good voyage from Reims to Liège, and behind him were quite a number of men flying very much faster machines. Several competitors came down at the wrong place near Liège, because the smoke of the brushwood fires lighted to guide them was mistaken for the smoke of neighbouring factory chimneys. This, at any rate, will not occur at the British aerodromes.

The performance of the three R.E.P. machines was distinctly good. Amerigo and Bobba had very little experience of cross-country flying, and were compelled several times to come down to find their way. Gibert, who flew a Bleriot in the Paris-Madrid race, instead of starting from Vincennes, started from Buc on the Sunday evening, and covered the 140 kms. to Reims in 1h. 15m., staying there the night, and reaching Liège next day.

Two other exceptionally fine performances were those of Duval on one of the little Caudron biplanes, fitted for the first time with a 50 h.p. engine, and of Allard on a Caudron with a 6-cylinder Anzani, who came down only 25 kms. short of Reims 7h. 5m. after his start, though he had never been outside of an aerodrome before. He had hard luck in smashing his machine in the Ardennes, after landing to ask his way, having up to then covered 210 kms. in 2h. in a gale of wind.

It is particularly worthy of note that the first biplane to reach Liège was Barra's Maurice Farman, fitted with a water-cooled Panhard motor. It also did first biplane time.

The flight from Liège to Spa and back on Tuesday was postponed owing to the wind and rain.

## The British Competitors' Troubles.

On Wednesday evening Eric Clift, who had left Reims that morning, rang up THE AEROPLANE and recounted the troubles which ended in Valentine retiring from the race. Clift had gone over to fit his compasses to Valentine's and Morison's machines. Morison's Morane was only ready on the Saturday night, and Clift had worked on it from 8 p.m., when it was

delivered, till 10 p.m. adjusting the compass. Valentine's Deperdussin was ready a little earlier, and Valentine made a short flight on it to test it, handling it excellently considering that it was his first time on the machine and the first time the machine had been flown.

At 4 a.m. on the Sunday Clift and Valentine arrived at the shed to fit the compass. On going into the shed they were astounded to find that the propeller and its special key, together with some minor parts, had been taken off the machine during the night and sent off to the north as spare parts for the other Deperdussin pilots. Forthwith Valentine and Lowe chased off into Paris to find a new propeller, leaving Clift to fit the compass. Having fitted it, he proceeded to adjust it; but, while working with the "Pelorus," or dummy compass card, with which adjustments are made, the Deperdussin men came in and ejected him from the shed, under the impression that he wanted to fit the big "Pelorus" to the machine, and saying that it was foolishness to put so large an apparatus on it. As a result the compass was never properly adjusted at all, and Valentine went off with it as it was, depending on the direction of the sun and not paying any attention to the compass.

Morison's machine was ready to start two hours before his allotted time, when he was not allowed to make a trial flight, consequently, when he did start, he went off on an absolutely untested machine of a type which he had never flown, so it is no wonder that he smashed it on landing. Two minutes before he was due to start, a mechanic discovered that his petrol tank was too full, so when the flag fell for him to go, the crew were busy draining petrol out of his tank and stopping it about all over the machine and the ground under it. As a result Morison was put back to start later.

While Valentine's tanks were being filled, just before the start, a French mechanic brought along a pettin, tin, and, purely by the chance of one of the Britishers spilling some on his hand as he opened the tin, it was found to be full of water. Rather a smart piece of practice to prevent a dangerous competitor from starting.

As soon as Valentine left, which he did in fine style, Clift and Lowe drove at top speed to Reims, where they made inquiries as to his whereabouts. For hours they could hear nothing except that he had not arrived. Then they found an official, who told them that the officials had known from early morning that he had come down near Mézières, some sixty kilometres (about 37 miles) beyond Reims, and was waiting for help. Off went Clift and Lowe and found Valentine, who had panicked his machine into a cornfield. The propeller was smashed and the chassis badly damaged. It appears that, steering by the sun, he had passed to the south of Reims, practically over Chalons Camp, and had flown on till his time told him he must have gone too far. Then, finding himself getting into lilly country, he had come down as best he could. As a matter of fact, if he had steered by his compass, even as it was, he would have got well within sight of Reims, so small was its variation when tested.

The rest of the evening was spent fitting a new chassis and propeller. The Deperdussin chassis is very light and built to be replaced easily, the idea being that it is cheaper to smash the chassis and so save the rest of the machine than to fit a strong chassis which will turn the whole machine over. The notion is quite sound for racing machines.

In the early morning of Monday Valentine started to get back to Reims, Clift and Lowe starting by car in front of him. He arrived in the aerodrome with his whole machine practically falling to pieces. It appears that in smashing his propeller the shaft which carried it was bent, consequently when he started the whole propeller had a "wobble" which threw it right out of balance. The unbalanced forces tore at the front of the machine till they wrenched the whole engine and its steel bearers loose in the woodwork, and in another few miles the whole of the power-plant would have dropped out, and the machine would have fallen to pieces in the air.

Valentine said he knew something horrible was happening in front, but he had made up his mind to fly till something broke, and fortunately he got to Reims before it did so. Clift's description of the state of affairs was that one could have lifted the engine clean out of the machine when it landed.

The rest of Monday was spent rebuilding the machine and putting the engine right. On Tuesday flying was impossible, and on Wednesday, being outside the time limit, Valentine decided to fly to Brussels and join the Circuit there, as is indicated in Dolphin's wire, which appears elsewhere. As a result, Valentine started for Brussels on Thursday, and about 9.30 that morning THE AEROPLANE received a wire from him, sent from Mons in Belgium, saying: "Engine stopped here. Landed safely."

#### The Liège-pa-Liège Section.

On the 21st, fifteen of the competitors managed to complete the Spa and back section, their times being thus:—1. Védérines (43m. 21 3-5s.); 2. Vidart (47m. 6 2-5s.); 3. "Beaumont" (1h. 24m. 45s.); 4. Gibert (1h. 51m. 2 3-5s.); 5. Garros (2h. 11m. 37 4-5s.); 6. Duval (3h. 14m. 44 2-5s.); 7. Weymann (3h. 51m. 47 1-5s.); 8. Renaux (4h. 4m. 14s.); 9. Barra (6h. 40m. 31s.); 10. Amerigo (7h. 39m.); 11. Prevost (9h. 23m. 16s.); 12. Train (9h. 54m. 18s.); 13. Kimmerling (10h. 4m. 33s.); 14. Verrept (10h. 18m. 50s.); 15. Le Lasseur (11h. 58m. 52s.). These results altered the general classification of the first day considerably, the order of the leaders, based on the addition of the times of the two stages, being: 1. Vidart; 2. Védérines; 3. "Beaumont"; 4. Garros; 5. Duval; 6. Weymann; 7. Barra; 8. Renaux; 9. Gibert.

Védérines gained nearly four minutes on Vidart. Both "Beaumont" and Renaux lost time through sparking-plugs going wrong, Renaux being forced to land at Ans on the way back. He was also troubled by his petrol feed going wrong. Weymann was delayed by a valve sticking up. Barra landed on the way at Ellensborn, across the German frontier, as did Amerigo, and was well received. Le Lasseur also landed in Germany. Verrept came down through sheer fatigue, had a sleep in a peasant's cottage, and completed the course. Tabuteau smashed a skid landing at Spa, but repaired it, and got part of the way back.

During the day news came in that Gaget was doing well after his accident, and that the progress of Lieut. Gaubert ("Dalger") was satisfactory, but that he would lose the sight of one eye. Bathiat (Sommer) and Bobba (R.E.P.) definitely retired during this stage. Wijnmalen and Molla did not get back on Wednesday night to Liège.

#### Liège to Utrecht.

The Liège-Utrecht stage was flown on the 22nd, and resulted in the victory of Gibert on the R.E.P. (2h. 4m. 25s.); 2. Garros (2h. 10m. 21 2-5s.); 3. Vidart (2h. 17m. 29s.); 4. "Beaumont" (2h. 21m. 45s.); 5. Weymann (2h. 21m. 12s.); 6. Kimmerling (2h. 38m. 38s.); 7. Train (3h. 25m. 48 2-5s.); 8. Renaux (10h. 56m. 57s.); 9. Tabuteau (10h. 58m. 17s.); 10. Wijnmalen (11h. 58m. 50s.); 11. Barra (19h. 10m. 43s.);

12. Védérines (22h. 45m. 50s.); 13. Prevost (22h. 56m. 44s.); 14. Duval.

The closeness of the times of the first six men over a distance of 180 kms. (110 miles) is quite startling, and shows how clever they are getting at finding their way across country. It is also curious how the three biplanists all took so long over the journey. This was due to their starting, coming back owing to the wind, and only going on again in the afternoon.

Amerigo had previously been having trouble with the *Commissaires Sportives* because he had not turned at the proper point in the Spa-and-back stage, and had been warned that he would either lose that stage or have to do it again, but elected to chance the result of the dispute and to start for Utrecht. He went up in the careless Italian fashion, with one cylinder of his R.E.P. misfiring, tried to do a sharp turn, slid sideways, and broke his left knee.

Védérines came down at Maastricht, smashed his Morane, came back to Liège, commandeered the machine of his stable companion Verrept, and smashed that when starting in the afternoon. Le Lasseur also turned his machine over landing at the same place, and retired from the race. Duval came down near Venloo, the half-way stop, and could not continue that day owing to the weather. Barra got to Venloo in good time, but lost himself and landed at the pyramid of Austerlitz, some 10 kms. from Utrecht. Ultimately Védérines arrived on the 23rd, having repaired Verrept's machine. Duval also came on, and was brought down again only 5 kms. from Utrecht, but got in before mid-day. Prevost also completed the stage.

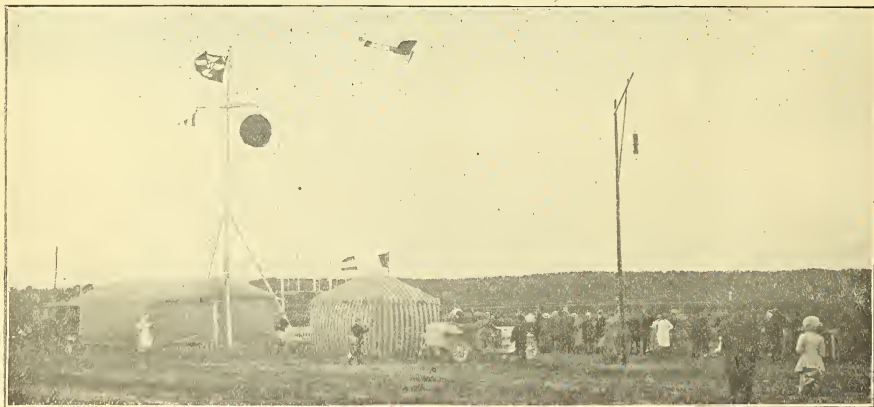
#### Valentine's Night Flight to Brussels.

Mr. Harry Delacombe, writing from Brussels on Saturday, says:—

"We were all very anxious about Valentine. Last night he was supposed to fly from Mons here, and we waited at Berchem Aerodrome all day. Plenty of wind, and a storm of rain in the afternoon. At 8.15 we left to come back to the hotel, and expected to find a wire from him; but no word at all, nor did the big car which is with him come back. We could not make out what had happened to him, and spent the evening telephoning all over the place, and at 11.30 we found out that he had started for Brussels at 8.38. There was, of course, not a soul at the Aerodrome, and no light, as no one expected anyone to arrive in the dark.

"No one seemed to have heard of any aviator landing anywhere, and it would only take twenty minutes to fly here from Mons, and less with the wind which he had.

"Anyway, to cut a long story short, at a quarter to twelve (midnight) he came up to the hotel in a taxi with a young fellow. He told us the mechanics let go his machine, so he had to go. He couldn't see a thing, and did not know



Garros landing at Utrecht:—Note how the wind is bulging the tents and blowing the flags.



# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz.:

35 h.p.	*60 h.p.	100 h.p.
---------	----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

Mr. Sopwith's recent record flight over Philadelphia, U.S.A.,  
was made with a 60-h.p. E.N.V.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESSEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

## HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone 8574  
GERRARD.



Eight Types

### Monoplanes

From 40 to 80 miles per hour.

### Biplanes

From 36 to 50 miles per hour.



Catalogue on Application.

Winner of De Forest Prize.

where to land. He couldn't distinguish trees from houses, and, finally, after 'jumping over trees,' to use his expression, he landed safely in a field, left his machine with two men to look after it, and this Frenchman who brought him in found a taxi somehow.

"Dolphin and I motored out to see everything pinned down, and at 5 a.m. went to meet the train from Mons with the mechanics. The big car had broken down.

"There is a new machine for Védérines waiting here, also another Morane, and a Train and Deperdussin, two now with Valentine's.

"Little Audemars is also here, very pleased with himself. He has got a new 'Demoiselle,' smaller than the other, and a 50 h.p. Gnome in it. Hotchkiss, who flies a Bristol, is here, with spare parts for Tabuteau, awaiting him."

#### Utrecht to Brussels.

After being hung up at Utrecht for two days, the competitors on the European Circuit managed to make a move on Monday, the 26th. After a very bad morning the wind dropped a little, and "Beaumont" snatched the opportunity to get away at about 2 p.m. Garros followed, and then Kimmerring, nearly an hour later. After him went Tabuteau, Duval, Védérines, Train, Vidart, Wijnmalen (who made two false starts), Gilbert, Renaux, and Barra. Prévost followed later,

leaving only Weymann, who is said to be taking no chances, as he is keen on flying in the Gordon-Bennett. The first to reach Breda, the half-way stop, was "Beaumont," then Kimmerring. Garros lost his way and came down 30 miles off his course. Védérines, Train, Vidart, and Gilbert all did good time.

The order at Brussels was: 1. "Beaumont" (37h. 21m.); 2. Kimmerring (37h. 31m. 48s.); 3. Védérines (38h. 57s.); 4. Garros; 5. Gilbert; 6. Duval; 7. Renaux. Vidart was reported down at Mechlin, and Tabuteau damaged his Bristol at Breda. The big times are accounted for by the fact that they are the times from the "official" start the previous morning, and represent something like 34 hours of idleness, waiting for the weather.

James Valentine, wiring from Brussels on Friday last to Eric Clift, said: "Compass perfect. Reims-Mons seventy minutes. Motor stopped." Mr. Clift was able to adjust the compass properly while at Reims, and it was evidently quite satisfactory afterwards.

On the 27th Tabuteau started from Breda early in the morning, but smashed badly before he reached Brussels. Barra also came down before reaching Brussels. Vidart turned up on a car, having come down again at Louvain, and driven into Brussels for repairs. Wijnmalen arrived at 9 a.m., having come through from Breda.

## Looking Forward.

### SURMISES AS TO THE FUTURE: By W. O. MANNING.

Among those who are following the development of the aeroplane are to be found many differences of opinion as to the future state of things in England when the aeroplane becomes as reliable as the modern motor car: differences of opinion varying from that of the sceptic who maintains that there is no future for aviation to that of the optimist who avers that the whole of the world's commerce, the whole of the world's passenger traffic, in fact, all communication from country to country, and from town to town, will be carried by air.

The real truth will probably be between these extremes. The railway or the tramp steamer have such a great advantage on their side when competing with aeroplanes for the carriage of merchandise that it is difficult to see how they can do otherwise than win.

This advantage is lower cost of transit owing to the reduced horse-power required, and, however efficient the aeroplane of the future may be, it is impossible to imagine it competing on equal terms, as to horse-power, with a tramp steamer of equal capacity.

Of course, aeroplanes will, in the future, be largely used for the transit of mails; but here the weight to be carried is not large, and the advantage of the increased speed of the aeroplane over all other practical means of conveyance known to man will make the use of the aeroplane an absolute necessity.

All the larger post offices throughout the country will have their own landing grounds, with special arrangements for handling the sacks of letters as they arrive, and the Post Office aeroplane, possibly painted a Post Office red, will be as common a sight as an ordinary mail van to-day.

Every hotel throughout the country will have its landing ground, properly provided with hangars, which, together with a properly qualified staff, will be at the disposal of those guests who require them.

Speaking generally, there will be two sorts of aviation grounds in England. The first will be the large ground, of which there are several examples extant to-day, which will be principally used for teaching pupils, and testing and tuning up new machines. There will not be many of these grounds, as the amount of land they require will always make their upkeep expensive, and they will generally be found within easy reach of large cities, so as to be as accessible as possible.

The second will be quite a small ground, and in time every little village will possess one of this latter type. They will be used solely for alighting and restarting, and will be provided with as many hangars as their importance necessitates. They will also be provided with easily distinguishable marks, so that an aviator flying over a district unknown to him will always be able to select a suitable landing place.

These latter grounds will most probably belong to hotel-keepers, though here and there corporations and district councils will be found enterprising enough to provide them

themselves. Petrol, oil, and all necessities will be obtainable at them, and their situations will be carefully selected so as to be as free as possible from trees and telegraph wires.

A telegraph board on which hourly information as to the weather to be expected will also be a feature of these grounds, and their existence will make aerial travelling both luxurious and safe.

The City man of the future will motor out of London on Saturday morning to the ground where his aeroplane is kept, and will fly to the place where he has elected to spend his week-end. He will be able, without fatigue, to annihilate space at a rate of at least 60 miles an hour in practically any weather, and will find it possible to spend his time fishing in Norway, or even gambling at Monte Carlo, if his tastes run in that direction.

On the sporting side there will always be records to go for, but by this time the record breaking machine will be quite a distinct type from the touring machine, although many of the improvements found necessary in the former will be incorporated in the latter.

There will have to be some distinguishing mark on all machines, with possibly an additional mark denoting nationality, so that machines breaking the international regulations for the control of aerial traffic can be recognised and brought to book.

Each of the Great Powers will possess an enormous aerial fleet, provided with weapons of destruction for use on each other. Examples of these will be seen continually patrolling the district where fortifications are to be found so as to prevent espionage as far as possible.

Police aeroplanes will also be necessary for the purpose of pursuing aeroplanes suspected of containing criminals or contraband, and also for the purpose of regulating aerial traffic.

On any general line of communication it will be difficult to find a time when at least one aeroplane is not visible in the sky, and it will be usual to see a large number at once continually passing and repassing on their various concerns.

This state of things will, of course, have its effect on other modes of transit. Not so many high-priced touring cars will be seen on the roads, and the railways will find their first-class traffic further diminished, though their goods traffic will not be interfered with. The health of the population will be materially increased, by the more healthy mode of locomotion, and aerial travelling will be the chief method of curing consumptives. The effect of the aeroplane on all international and social relations will indeed be incalculable, but the result will be a healthier and better world.

[As a very successful constructor and designer of aeroplanes, Mr. Manning's opinions are worth considering seriously, for no one recognises better than he the limitations of the aeroplane of to-day, nor is more competent to speculate on a sound basis as to the future.—Ed.]

## Air Currents.

The following is from the *Kentish Express*:—"Sir,—My son, aged thirteen, was driving a governess car back from Faversham last Monday morning about ten o'clock, and just after passing Painter's Forstal, he saw an aeroplane swooping down, coming right across the road. Not knowing what to do, he pulled up, and immediately the aeroplane passed over him, one of the runner wheels striking the whip (nothing but being in a low vehicle saved him from a serious accident). It then struck the ground and rose up again. The horse bolted, and before he could stop him the aeroplane was out of sight. A drover, who witnessed it, told him that he made sure it had landed on the top of him. He was loading home with a sack of middlings, and the propellers were so close that they drew a cloud of meal through the sack into the air.—Yours faithfully, H. F. B."

The italics are ours. The editor of the *Kentish Express* comments:—"Judging from the experiences of Mr. H. F. Boucher, whose letter appears elsewhere, the dangers of the road are extending to the attacks of the aeroplane. Motors going at express speed will be as nothing to the hurtling of the flying machine just above our heads."

Hurtle, hurtle, little plane,  
Flying low across the lane;  
Did you really thusly frolic?—

Or may the whole performance, when carefully considered in the light of all the probabilities, be attributed chiefly to a vision alcoholic?

In order still further to save the War Officials from brain fag, THE AEROPLANE ventures to suggest the following coat of arms for the Air Battalion: Crest—*A remou rampant*. Arms—An aeroplane casséed proper on a field vert. Motto—"Back to the land." Supporters—Dexter, an aviator undamaged, much astonished. Sinister, a field officer garbed resplendent, obsolescent, retardant.



ROBERT LORAIN'S SMILE.—Study of an aviator who has just been told a preliminary "Air Current."

A certain young woman was popularly supposed to be training for her pilot's certificate at Pau lately, though some people said she was only a passenger. The constructor on whose machine she made her flights was asked, "*Est-ce vrai que cette jeune personne vole?*" He replied indulgently, "*Bah! . . . Elle vole! . . .*" *Volailler* is a new verb well worth preserving, but it is quite impossible to find a translation for it.

\* \* \*

A well-known designer-constructor-pilot recently started to produce a new machine, and one day in the works the "wood-butcher" came to his foreman, saying: "'Ere, Bill, what d'ye make o' this sketch o' the Boss's? I dunno what it means."

The foreman studied it, and anon went to the works manager, and said: "I'm very sorry, sir, but this design of the giv'nor's puzzles me—I don't know what it's meant for."

Presently the works manager, in despair, went to the *fons et origo*, saying, apologetically: "Oh, by the by, Mr. Blank, we haven't yet made up that thing you designed the other day. I don't understand your sketch."

"Don't understand it?" said the designer. "But, my boy, that's just what you're here for. I'm only the inventor; surely you don't expect me to know what I meant? That was just an inspiration."

\* \* \*

## More Etiquette for "Airmen."

Never chase a bird smaller than yourself.

Never let your beard grow long. It may so easily become entangled in the propeller.

False teeth are best left at home in the strong box: engine vibration is apt to dislodge them.

Never sign your autograph until you have looked to see that no blank cheque is hidden underneath.

Avoid striking matches on your propeller. It is a slatternly habit, and as such is not to be recommended.

It is as well to carry a tobacco pouch. It may save a bone in the event of a *chute*.

And, above all things, bear in mind that Dr. Gimbell's Glutinous Globules are death to air-sickness [adv't.].

\* \* \*

## Answers to Correspondents.

ANXIOUS.—You say you frequently see as many as three elevators at once when flying your Bristol. Knock off Standard Bread, increase your alcohol allowance, and write to me in a month's time.

LUDWIG.—No, there is no fee for landing in the sewage-farm. All are welcome.

X.Y.Z.—Wrong again. Mr. Hamel prefers jam to marmalade.

HEART-BROKEN.—You say you cannot understand how to get the machine of your invention into the air. Have you tried a keg of gunpowder underneath it?

PERPLEXED.—Mr. Gilmour will advise you.

CHIC.—Yes, your homespun and home-made cycling suit will do very nicely.

WEDLOCK.—I am indeed sorry that your innocent invitation "Will you fly with me?" should have entangled you in a altogether undesired elopement. You really must keep your wits about you, my dear "Wedlock," or it may occur again, in which case your certificate would most certainly be suspended.

IMPATIENT.—No. Mr. Grahame-White has not yet written *The Story of My Life*.

SHEEP'S-EYES.—It is considered forward and unmanly to fly into a lady's arms, unless, of course, by special invitation.

MONOPLANIST.—I am sorry to say you have no legal right whatever to resent being called a flighty person. You must restrain your choler as best you can.

MONA.—You say you are going for a flight with your aviator friend, but do not know how to attract his attention when you wish to point out the pretty views to him. Jog his elbow, "Mona," or prick him in the ear with your hatpin!

H. M. M.



## The Gordon-Bennett Race: Prospects and Possibilities for Saturday.

The Gordon-Bennett race is going to be a bigger thing than most of us expected, although it practically resolves itself into a fight between the French manufacturers.

Great Britain has at least a sporting chance of winning, for the Blériot machines will not have it all their own way as they had in America, and consequently it will pay the Blériot firm to give Hamel as much attention as they give Leblanc, these two having the only Blériots in the race.

The French team actually nominated consists of Leblanc on a 100 h.p. Blériot, Nieuport on a 70 h.p. Nieuport-Gnome, which is faster, on its trials, than Leblanc's machine, and Chevalier, on another Nieuport, with a Nieuport engine. Aubrun (Deperdussin), Védérine (Morane), and Gibert (R.E.P.) are the reserves. Down at Eastchurch last Saturday I found Harold Perrin, the Secretary of the Royal Aero Club, and arrange in general of everything connected with the race, faced with the horrible problem of housing four Nieuports, three Blériots, three Deperdussins, and a R.E.P. for the French team. Evidently France means winning, hence the formidable array of spare machines.

One of the Nieuports is probably for Weymann, who, although generally regarded as a French crack, is by birth a Haitian, and has been nominated by America as their sole representative.

The R.E.P. was originally intended for Amerigo, who was to fly for Italy, but he has, since the nomination, broken his leg, and so is out of it, though otherwise he would have made a good show, for he flew a trial over the Gordon-Bennett distance at Buc at a speed of over 73 miles an hour. Gibert, the other R.E.P. crack, has been put on as a reserve man, if he finishes the European circuit in time to get back and fly.

No one else has been nominated either for America, Italy, or Germany up to the time of going to press.

### The British Team.

Great Britain has definitely nominated Hamel and Ogilvie, excellent choices. Hamel is as clever a flier of a Blériot as this or any other country can show. Ogilvie has been working quietly for weeks, assisted by Wilbur Wright, tuning up his Baby Wright racer with an N.E.C. engine. Up till Monday last he had not had the machine out, but the machine itself presents no difficulties to him, and the engine has been most carefully tuned, and Ogilvie told me that after a number of severe tests he was absolutely satisfied with it. He said that he did not expect his machine to be as fast as the Nieuports, R.E.P.'s, etc., but that he could trust his engine to get the distance.

Great Britain's third man is still to be chosen, and may not be decided till the night before the race, and the choice does not seem very wide.

Clement Greswell may be allowed to fly Grahame-White's 100 h.p. Blériot, which won the race last year and has not been flown in this country since Grahame-White's return from America. This is the only engine of its size in this country, and it is a pity everything has been left undecided so late or perhaps some British manufacturer might have been induced to build a real racing machine for it, as Grahame-White did not care to go to the expense of buying a new freak racer, for no doubt he would have lent the engine if someone had offered to build the machine. However, if he lent the machine to Greswell, the latter would certainly make a good show with it, even as it is.

Another chance is Gilmour, who has been down at Salisbury Plain during the week-end to test a new Bristol monoplane which Prier (of London-Paris fame) has had a hand in designing. I hear very good accounts of it.

Yet another chance is Valentine, whose Deperdussin is decidedly fast, though perhaps not up to Aubrun's special racers, and the firm might lend him one of those which are sent over for Aubrun, if he were nominated.

Practically no one else of the British aviators would have much opportunity of doing anything, as none of them have really fast machines.

Given a fine day, Hamel, Leblanc, and Nieuport should be very close together, but if the weather should be at all rough I should pin my faith in Ogilvie, whose machine is much

fitter to tackle a big wind than any of the others, and who would save seconds in the lap on turning corners.

The course is excellently planned from a spectator's point of view, for it consists practically of two long straights, of nearly  $\frac{1}{2}$  miles each, with a sharp corner at one end, on the top of the hill to the west of the sheds, and a big bend at the eastern end over the flat land near the Swale, where the onlookers will be able to see every manoeuvre.

Owing to the terrific speeds of the machines, most of which fly at well over 80 miles an hour on the straight, the course has been arranged so that, while the spectators can see everything distinctly, the machines are never within a quarter of a mile of them, so that if a machine comes down out of control when flying along the straight next the enclosures, there is no fear of it running into the crowd.

### The Arrangements.

There is a capital enclosure for cars to the east of the sheds, whence a full view of every inch of the course can be obtained, and in the enclosure will be large marquees where square meals can be got. There is, however, a certain amount of annoyance felt because members of the Club as well as visitors have to pay 10s. to take their cars into the enclosure.

There are no grand stands, but the marquees provide shelter in case of rain, and as the enclosures are only five minutes' walk from the station, to which special trains will be run direct from London at specially cheap fares, there should be a goodly crowd in addition to those who motor down.

At the back of the Royal Aero Club sheds is a high hill, from which a fine view is obtainable all over the course, and this will be the cheap enclosure. Food and drink will be provided here also, so everyone interested in aviation will be able to see the race and have a splendid day's outing at quite a moderate cost; say 5s. to 7s. 6d. for the day.

These racing machines may be freaks, but they are very wonderful productions, and the spectacle of an 80-mile-an-hour machine travelling with a 25-mile-an-hour wind in the same direction is most impressive.

The surface of the ground is good all along the home straight, but out in the country, where the big curve is, it is somewhat rough, and there are a few ditches. On this portion a good deal of work is being done to make reasonably good landing ground for a width of at least 200 yards, but if a fast machine did land there it would stand a fair chance of damaging itself.

Everything possible has been done for the safety of competitors and for the comfort of spectators, and if Eastchurch is still far from being the ideal locality for the greatest speed event of the year, which ought to attract tens of thousands of people—in France it would attract hundreds of thousands—nevertheless the best has been made of a bad job, and those who take the trouble to make the journey, which, after all, is only a matter of a couple of hours, will see flying of a quality never before seen in this or any other country.

C. G. G.

### Progress at Huntingdon.

A correspondent at Huntingdon writes:—"Many congratulations on new paper. *C'est vraiment, très chère machine*, what? They are not doing any flying here till after the hay is cut, and about that time (in a month or so) we hope the new machines will be ready.

"They gave a small show here last Whit-Monday, but unfortunately the Anzani, which they had only fitted to the Blériot the day before, was not giving all the power she ought, so there was not much doing. I think Moorhouse will make a jolly fine flier, seeing that, only having been in the machine some half-dozen times, he managed to make two complete circuits of the ground. That was on the Sunday night, but on the Monday he could only get hogs out of her."

"When the hay is cut and they get the engine tuned up properly, I do not think it will be long before he gets his ticket."

James Radley and his friend Moorhouse are now running the Portholme Aerodrome on their own account, and as soon as their new machines are ready things should be very lively there.

## The Week's Work.

## Monday, June 19th.

BROOKLANDS AND HENDON.—Nothing doing. Too much wind.

## Tuesday, June 20th.

BROOKLANDS.—Pixton out making first trials on all-British Bristol, with E.N.V. engine, and reported it very easy to handle. At 6 a.m., Watkins, on the Howard-Wright E.N.V., took up Dr. Mawson, of the Australian South Polar Expedition, as passenger, and afterwards took Mrs. Mawson. Later the two Pashleys were out on the Universal Aviation Company's "Birdling" biplane. Pixton again out on the Bristol E.N.V. with passenger, across country. Said she lifted as easily as the Bristol-Gnome, and turned much more easily. Fisher, on the "Henrietta," up at 800 feet, outside aerodrome, and Bell, on same machine, doing fine banked turns. Manisty also practising on the "Henrietta." Noel and Rainham rolling on Avro-Curtiss. Hunter doing short flights on Avro biplane. Raynham up on Avro-Farman. Blacker on Avro biplane had narrow escape of "discontinuing" suddenly. Blondeau doing passenger flights, with Johnson as passenger.



Lieutenant Longmore, R.N. on the Short Biplane which he flew to Eastchurch. Note the stream-line wheels

## Wednesday, June 21st.

BROOKLANDS.—Lieut. Longmore, R.N., left with Short biplane soon after 5 a.m., landed at Walton Heath golf links to adjust petrol feed. Went on eastward into Kent. Told writer during week-end that he had very bad time along Maidstone Valley. Blown down so low that could not clear top of hill between Maidstone and Sittingbourne, so had to circumnavigate it, and came into Eastchurch from south. Magnificent flight. Congratulations to the Navy on Samson's and Longmore's Eastchurch-Brooklands jaunts. We've got the men, we've got the money, but the "ships" are wanting to complete quotation. Later in evening Gordon England out on Bristol in bad wind.



Lieutenant Longmore flying the Short at Brooklands.

## Thursday, June 22nd.

BROOKLANDS.—Coronation Day celebration at aerodrome strenuous and exciting. No flying—Winston Churchill respected, though not in London County. Home Secretary in league with Clerk of Weather. Procession round Aeropolis, headed by motor lawn-mower as band-wagon, with half a dozen aviators on board. Machine front of an 8 h.p. tiller-steered Daimler of prehistoric origin, geared down 25 to 1, to an ordinary hay-mower. Irresistible force at 2½ miles per hour. Came in contact with hitherto immovable body, i.e., doors of the Flanders shed. No brakes, clutch refused to come out. Controls not working. Procession entered over remains of doors, shouldered two aeroplanes aside without damage, and ceased against work-bench at back of shed. Proprietor of shed, in middle of vehicle, compelled to participate in carrying by assault of own property. In evening great pyrotechnic display. Searchlight from south-west of track very effective on cottages and main block of sheds. Final *feu de joie* by assembled aviators with maroons and crackers, punctuated by revolver shots, enough to shatter glass for miles. Total damage done surprisingly small. Chiefly attributable to assiduous care of performers and consideration for feelings of others.

## Friday, June 23rd.

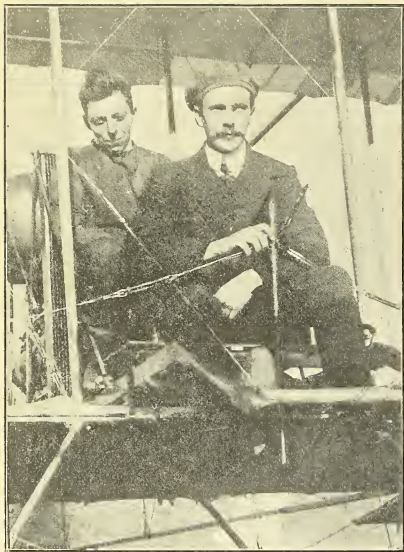
BROOKLANDS.—Gordon England out early on Bristol, and Snowden-Smith on Blondeau biplane. Pixton again tuning all-British Bristol. Gilmour gave exhibition of flying nickel-plated Bristol with five cylinders and a six-foot Union Jack on one rudder. Lieut. Reynolds, on Air Company Bristol, up at 1,600 feet. Adams got brevet on Avro biplane, observed by Watkins and Fisher. Fisher, Bell, and Manisty all at work with the Henrietta.



HENDON.—Dyott and Metford rolling in morning. No other work during week.

#### Saturday, June 24th.

BROOKLANDS.—Manville Prize day. Howard-Wright, Avro, and Bristol machines duly certified all-British on behalf of Royal Aero Club by editor of THE AEROPLANE. Wind very bad. Pixton did short trial at 10.15 a.m., but impossible. About 5 p.m. heavy shower. Wind dropped. Pixton out on heels of rain with Briginshaw as passenger. Wind and Pixton



C. Howard Pixton and C. H. Briginshaw napped immediately after their descent on Saturday.

got up about same time. Horrible performance. 26m. 6s. of acute anxiety for rest of aviators. Machine blown every way but right one, and appalling dives when turning to go down wind. Pixton and Briginshaw quite enjoyed the trip. More than others did. Pixton more than ever pleased with ease of handling now gyroscopic force of Gnome removed. Wind so bad that Macfie on Howard-Wright, after a short straight flight, came to a standstill on the ground, and was blown over sideways. Pixton and passenger weighed 21 stone 6 lbs., and had big load of oil and petrol. Fine performance for all-British machine.

#### Sunday, June 25th.

BROOKLANDS.—Gordon England out late on Bristol with several passengers. Also Raynham on Avro-Farman. Fisher and Bell alternately on "Henrietta," performing well in 12 miles per hour wind. Martin-Handasyde now fitted with Antoinette engine, and running for first time to-day. Machine looks magnificent with new bow and bunting.

#### Work at Lanark.

Mr. H. Orville Walsh, of the Ewen School of Flying, writes: "Cross-country flights have been the rule at this aerodrome during the past weeks, few flights having been confined within the limits of the ground. Mr. Ewen recently made a most spectacular flight in the gathering darkness, flying over Huntly Hill, the turning point of several cross-country flights, and landing within thirty yards of the hangar after a *vol plané* from 200 feet. Mr. Andrew Forson has been learning, and proceedings have been varied by several flights within the aerodrome by Mr. Ewen to demonstrate the controls. Thursday, June 8th, being Lanimer day, many

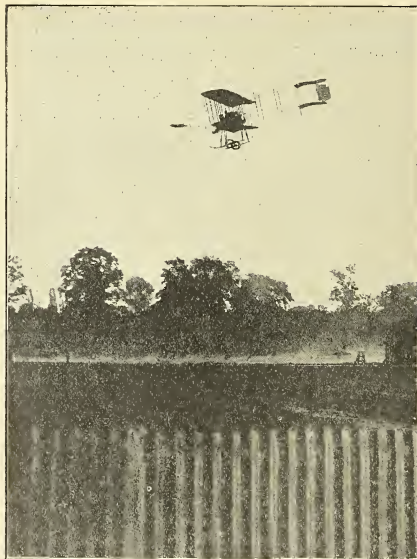
thousands were in attendance at the aerodrome, but the weather was such as to prevent flying save in the morning, when Mr. Ewen made a splendid flight, rising to 500 feet, again and again circling over the surrounding country, flying over the hangar and Loch woods, and at last landing after a steep descent, with the engine switched off, from about 300 feet.

This flight, seen by the inhabitants of Lanark and by the passengers in the incoming trains, was made on the school machine, a 25 h.p. Anzani-Blériot, which had never made more than a three-minute flight previous to Mr. Ewen acquiring it. Since then most of Mr. Ewen's time has been devoted to instruction, the pupils making good progress under his tuition."

"The inclement weather last week put all thoughts of air-work out of the question, but work was busily carried on in the hangars as usual, the pupils and staff being fully occupied on the construction of a new Scottish-built monoplane. The advent of this machine, which is cleverly designed by W. H. Ewen, will be watched with great interest at Lanark.

"On Friday the wind dropped, and with the change in the weather conditions the school was soon actively at air-work again. Mr. A. Forson had the school machine out, and took the pilot's seat to gain experience in control. He has the makings of a competent flier, as he has plenty of confidence and thoroughly understands the construction of the machine. In the evening Mr. Ewen had the school Blériot out, and made two small flights in the aerodrome. The wind rising put a stop to further flying.

"Saturday the wind was too strong for flying, but in the afternoon Mr. Ewen had the machine brought out and explained the working and controls to some visitors, one of them being so impressed that he signified his intention of joining the school at the earliest possible moment."



One of Pixton's dives on Saturday. The anemometer showed the gusts to be running straight up from 10 to 30 miles per hour and down again

#### Work at Beccles.

Miss Dorothy Haward writes: "There has been practically no flying done this week, as the beginning was quite hopeless as regards weather, being windy and rainy, and the middle of the week the ground was given over to the public for Coronation festivities. Bandstands, tea-tents, flag-poles, and other



kindred frivolities were scattered broadcast thereon, so aviation was postponed for the time being.

"However, the machine will be out again at the beginning of the week, and all be in working order again.

"One of the machines is entered for the *Daily Mail* 'Circuit of Britain,' so there is a busy time ahead for all concerned getting everything up to 'concert pitch,' as it were.

"A dear old lady, on being shown some photographs of the machine and pilot taken on the ground, remarked: 'And do they sit like that all day, my dear?' I think she imagined it was part of the business to sit in a machine and look pretty, after the style of shop window advertisements.

"It is said that a little knowledge is a dangerous thing, and certainly if the advice of some local enthusiasts on matters of construction were followed it might be—very. However, to awaken interest is the great thing.

"The E.N.V. engine fitted to the machine has never given a moment's trouble since it was installed; in fact, it may be truthfully said to run like a dream. Who said there were no good British engines?"

#### Early Risers.

The Blondeau-Hewlett School at Brooklands is going strong. There are now six pupils at work, and Mrs. Hewlett, writing to *The Aeroplane*, says: "Five of them have taken the plane alone and have not yet 'cassé du bois,' though I touch the wood of my pen in writing it." Dr. Hansen has recently joined the school to take his certificate, but he is not a novice, as he has flown a Voisin machine previously. This school is one of the most hardworking at Brooklands, for both M. Blondeau and Mr. Snowden-Smith, who are the pilots, made a point of being up at 3 a.m., and consequently are able to get in some work during the short morning calm, even in the worst weather.

#### Another New Machine for Brooklands.

Lieutenant Porte, R.N., and Mr. Lawrence Santoni (who has already had considerable experience on a Tellier) have recently been flying Deperdussins at Reims. It is their intention when they have mastered these machines to bring them over to England and open a school of aviation at Brooklands, where a shed has already been rented.

#### Grahame-White at Southport.

Grahame-White and the sporting committee at Southport, headed by Leonard Williamson, who organised the aviation meeting during the Coronation holidays, had the hardest of luck with the weather. After a splendid afternoon's flying on the Wednesday afternoon, the weather became impossible, and no flying could be done.

The well-known aviator, Mr. "Smith," who was holidaying at Southport, reports to *THE AEROPLANE* that the aerodrome prepared by the committee was as good a piece of ground for starting and landing as anyone could wish, and that the general arrangements were excellent. If only the weather had behaved itself Southport would have enjoyed what the local Press would doubtless have described as a "carnival of airmanship."

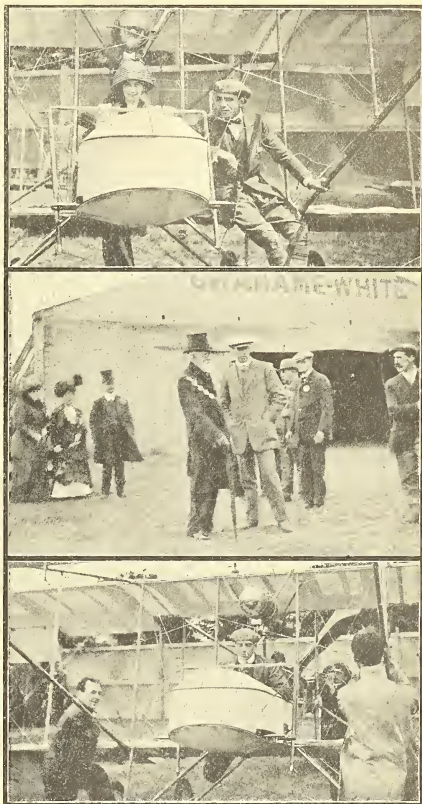
On the Wednesday Grahame-White, in his usual workmanlike way, had his machines ready by 6 a.m., and made a trial flight at 11 a.m. At 2 p.m. he made the first exhibition flight on the old familiar Farman. Soon afterwards he brought out the "Baby," which has recently been fitted with a really good nacelle and generally improved by Compton Paterson, and made a pretty flight on that.

A shower stopped the performance after Grahame-White had done a number of the clever tricks from his large repertoire, but as soon as the rain was over, like the proverbial sparrow and the spout, he was up again, this time with passengers.

The first passenger was Mrs. Leonard Williamson, the others being Messrs. Hartley, McKechnie, and Hampton. Late in the evening Miss Austin, the daughter of the Mayor of Southport, made a trip as passenger. Afterwards the Mayor himself, taking his courage in both hands and his chain of office round his neck (much to the alarm of the official whose duty it is to watch the chain), and having bid a tender farewell to his family and his faithful bourgeois, also went up, and apparently enjoyed himself hugely. Mrs. Tonge, Messrs. Walker, Sharp, and Kennedy all had trips, and then, for a change, Grahame-White took Mr. "Smith" sitting beside him on the front edge of the plane, instead of in the passenger seat.

Grahame-White's popularity in Southport is immense, and his reception when he appeared in public, at the theatre, or in

the street was suggestive of a royal progress. Let us hope that all this enthusiasm will endure, and will really lead to a popular interest in aviation in Lancashire, for the Freshfield and Waterloo schools can do with more pupils, no doubt.



Above: Mrs. Leonard Williamson on the "Baby."

Middle: Grahame-White and the sporting Master of Southport.

Below: Grahame-White and his mechanics testing the "Baby," now fitted with a bigger propeller.

#### Some Hints from Paris.

Writing to *THE AEROPLANE* from Paris, Captain Bertram Dickson says that all the Gnomes which did any good in the Madrid and Rome races were 50-h.p. with old-model valve springs. Weymann and Bielovucic had 70-h.p., but their motors failed them. Védrier and Garros would not have them at any price. The Clément-Bayard monoplane was smashed the other day. The tail was too whippy. The Nieuport was too fast for the Rome race, as the landing chassis of the Nieuport was not suitable for cross-country work on so fast a machine, which accounted for its not doing better in the competition. M. Levassieur, of the Antoinette, has an idea for a chassis which jumps the machine off the ground like a grasshopper and gets it straight into the air.

## Gliding as a Branch of the Sport.

By HORACE W. H. VAUGHAN.

The gliding man is feeling just a little sat upon at the present moment. He works somewhat alone with unbounded enthusiasm, and spends all his spare time and some little cash upon the construction of his machine. He is an eager reader of all aero literature (particularly constructional and control details), but his performance as a full-sized effort is hopelessly overwhelmed by the motor-flying, and after a little tumbling about upon the hillside he is left with some feeling that his pretensions upon the subject are slightly deserving of contempt. And I am sure this is not in the least deserved.

In my opinion he must be a more useful supporter than the member of the Upper Tooting Model Aeroplane, Kite Flying, and Hoop Bowling Club—subscription 3d. per week—aviation meetings on the common ("we hope everyone interested in aviation will come to our president's lecture on 'How I learnt to fly a kite'"), or the paper dart, bird's feather, sycamore seed enthusiast who writes to the aviation papers, sending photos of these objects.

It is, therefore, much to be hoped that those who have so enthusiastically taken up the subject of gliding, from the sporting rather than from the experimental side, will not relax their efforts to make a success of their enterprise on account of the many difficulties they meet—difficulties which undoubtedly need a considerable amount of patience to overcome.

Enthusiasm hardly expresses fully enough the feelings of the man who is impelled to construct his first man-carrying machine from sheer interest in the subject and a keen desire to participate in some way in the sport of flying, although circumstances and limitations of all sorts are dead against the possibility of owning a motor-driven flier—and there are, indeed, despite the impression conveyed by the flying periodicals, quite a fair number of people of the plodding motorizing class who are so limited.

As every reader knows, a glider is an aeroplane without an engine, using gravity as its motive power, and flights are possible with such a machine, dependent only upon the length of the slope selected for practice.

Given the proper set of conditions, which do not in themselves seem particularly difficult to obtain, the sport is one practically free of expense, and the cost of a machine quite efficient for practical use can vary from a few pounds for materials for the man who constructs his own apparatus—nice, clean, interesting work, too, for those who can handle tools with a fair amount of precision—up to anything approximating £100 for a top-notch outfit for the man who prefers to buy his toy outright.

For the sportsman who lives in hilly country such as parts of Devonshire or Scotland, the difficulties in the way of taking part in the sport of gliding lie only in the acquisition or construction of the machine; and these troubles, as many town dwellers could testify, are quite insignificant compared with those which the latter class of enthusiast have to overcome.

Undoubtedly the first and foremost stumbling block is the difficulty in obtaining permission to use a ground, and it is heart-breaking to receive refusals from owners of quite suitable pitches, even where a rental is offered for the use of a barn or shed, for reasons either unspecified or of the flimsiest nature.

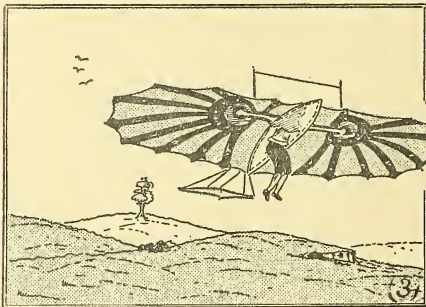
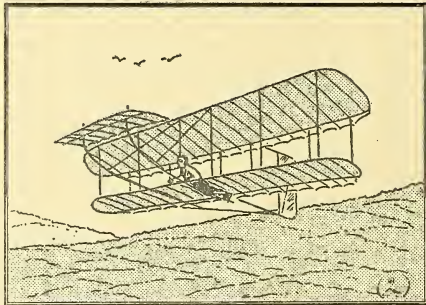
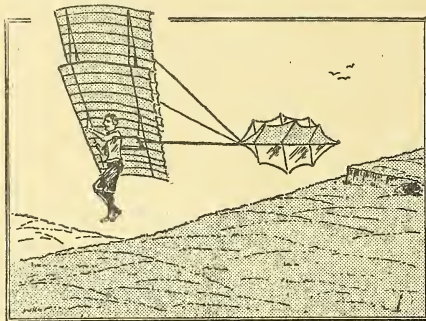
It is quite certain that gliding can do no harm at all to a piece of sloping meadow land, and it is only to be supposed that the dread of some unknown quantity is at the bottom of the mind of the man who withholds assistance in this way.

However, these difficulties, as has been mentioned, are fortunately not for everyone, and provided ground—preferably a south-westerly slope of one in seven or so—and a shed for use as a hangar are available, the acquisition of the machine opens up the possibility of a sport which, according to the opinion of those who have met with the fullest success, is well worth following up, and of an exhilarating nature only to be excelled by actual motor-driven flight itself.

It should be some consolation to those whose difficulties seem almost insurmountable, to recollect that some of the most successful gliding men were several years before they achieved actual free flight upon their machines.

It is going over old ground for the benefit of those who are newly interested to say that for the first trials a machine should be used of large dimensions, with plenty of wing

spread, for with such a glider it is possible to fly on quite a moderate slope and in a comparatively gentle breeze, both elements conducive to safety, although with skill attained by practice undoubtedly the gliding man will prefer the convenience of the small surface machine, possibly of a monoplane type, which has many latent possibilities as regards portability.



(1) Chanute type glider (2) Wright type glider  
(3) Pitcher's monoplane glider



It really would seem that in construction for portability lies the keynote of the success not only of gliding, but also of motor-flying, from the point of view of its popularity on a large scale, and it is just a little surprising that builders are apparently not turning their attention wholeheartedly to this particular feature.

In the case of the glider weighing perhaps under a hundred-weight, given portability, by which is understood its power of being readily set up or taken down at will (what a delicate piece of mechanism an umbrella would seem to a man who had never previously seen one), it could easily be towed behind a motor bicycle to the open downs, the sport enjoyed, and the machine towed home, doing away at once with all limitations of housing and ground.

In the case of the motor-driven flyer, although somewhat outside the sphere of this article, the sport would seem within the reach of a very largely increased number of men were it possible to house the machine at home, and either tow it behind a car or drive it (with a suitable road wheel coupling) on fine days down to one of the recognised flying grounds, such as Brooklands, where a small payment might permit the enjoyment of a morning's sport.

To say nothing of the keen pleasure of having the machine at home for inspection and contemplation in leisure moments, and most keen motor owners will bear out that their pleasure in possession would be halved were they compelled to keep the beloved machine at a distance.

Where would the umbrella trade be if umbrellas had always to be carried set up, or the book trade had the stone slab never been superseded by the papyrus?—("First edition of THE AEROPLANE on fine India paving slabs closely clipped in sixty chunks—only four days more.") All a question of

portability, and so, largely, with the aeroplane; portability, and always portability, now that flying is no longer the fluky uncertainty that it was in the dim ages of two years ago.

For the man who takes up gliding, the subject of flying will possess new interests. All the methods of aeroplane control can be applied with practical effect to gliding planes, and he will visit a flying ground or aero show with a new interest in the constructional work and a keen appreciation of the ingenuity brought to bear in controlling the various types.

The little pictures convey as pictorial diagrams a few well-known types of successful gliding planes, but any kind of motor plane could be reproduced on a slightly smaller scale as a gliding plane, and, owing to the absence of engine vibration and propeller thrust, the construction may be of a lighter and more portable nature, permitting the work of making to be undertaken in any fair workshop available.

The earnest enthusiast is recommended to take up gliding as a means of actually obtaining a real taste of the sport if he cannot acquire a motorplane; and, above all, to send along to THE AEROPLANE particulars of the results of his efforts, for the gliding man is at present working in rather a solitary fashion, and the experiences of others are of encouragement and support.

And if the thrills of gliding do fall somewhat behind those experienced by the intrepid trans-continental "airman," fighting his way doggedly, inch by inch, revolver in hand, through flocks of attacking eagles, landing at last half dazed upon the green sward whence, hugged and embraced by the bystanders, he is led gently away to the buffet (Thank you! We do occasionally buy an evening paper ourselves,—Ed.), at least the sport possesses the dignity of a full-sized effort, and should equal in pleasure that of tobogganning.

## The Comparative Efficiency of Aeroplane Types.

By P. K. TURNER.

An aeroplane can be judged as to efficiency on two counts: the weight lifted by a given surface at a given speed, and that carried at a given speed by a given power.

Now the thrust developed by the propeller is absorbed (1) by the aerodynamic resistance, (2) by the useless head resistance and skin friction of the planes, body, and stabilising surfaces.

The aerodynamic resistance depends on the weight of the machine, and on its gliding angle. Therefore the machine should be as light as possible: the gliding angle depends on the efficiency of the planes and the lack of useless head-resistance, etc.

Comparing the biplane or monoplane type we find that, for equal surface:

- (1) The biplane of the same span has an aspect ratio twice as high as that of the monoplane.
- (2) The planes being of half the chord, the ribs are much less than half the weight, i.e., the ribs of two planes of 3 ft. chord weigh less than one of 6 ft. chord and same span.
- (3) Since the load on each spar is halved, the spars in all would weigh the same in both cases were it not that the biplane type of wing construction is infinitely better adapted, in practice and in theory of structure, for the work.
- (4) The biplane avoids the necessity for a "cabane," and immensely simplifies the design of the chassis.

Thus we find that the biplane is likely to be far more efficient. On the other hand, there is the question of inefficiency caused by interference between the two planes.

With regard to this, it is obvious that if the planes are far enough apart, there is nothing to fear. I have studied this point to some considerable extent, and, by working from the known lift of various machines, I arrived at the fact that the thickness of the stratum of air affected must be somewhere about 1.25 times the chord. For planes of the type used at present. This tallies exactly with the loss of 20 per cent. found by the Wright Brothers with equal gap and chord, and with various standard experiments of lift of planes; also the Bréguet machine, which is exceptionally efficient, has a gap of just 1.25 times the chord, so that there need be no fear of interference if the gap is at least 1.25 times the chord.

It is well known that for any given set of circumstances, there is an angle of maximum efficiency for the wings. Now to obtain longitudinal stability it is necessary to have either (1) a "super-lifting" front plane, or (2) an "infra-lifting" tail

plane. That is to say, a leading plane set at a greater angle than the main plane, and overloaded, or a tail which is set at a less angle than the main plane and so is underloaded.

It is obvious that neither of these can be set at the most efficient angle: so that any lift they may give is obtained at a greater cost than if it were obtained from the main plane. Therefore, the most efficient longitudinal stabiliser is the non-lifting tail. In this connection it should also be noted that the non-lifting tail machine is the only type in which the draught of the screw has no effect on stability.

If, when a tractor screw is used, the engine be switched off, the machine loses a certain amount of lift, as it no longer has the slip stream to work in; but since in any case the tail has no lift, the relative lift of tail and planes is as 1 : 0, and therefore is not altered by the slip stream, i.e., the stability remains unchanged.

With regard to lateral stability, there seems at present to be no proved method except to use a dihedral angle. This, of course, is well known to cause a slight loss of power, as it encourages end losses through air escaping underneath the end of the plane and coming in on the top—it is the same effect that makes a high aspect ratio of such importance. Personally, I believe that the difficulty can be overcome, and in a later article I hope to go into the question.

The design of the fuselage should depend largely upon the speed of the machine; for a tail outrigger of the type usual in biplanes may be made lighter and cheaper than a monoplane fuselage, while the fuselage, if properly designed and covered in, offers less head resistance. Therefore, for fast machines, where head resistance becomes of great importance, the monoplane type may very probably be superior.

The fuselage of any high-speed machine must, of course, be entirely covered in from propeller to tail, and must be very carefully designed to avoid eddies. The present anomaly of allowing the pilot's head to project cannot surely continue long. It is extremely uncomfortable for the pilot, and, worse than this, it very much increases the head resistance of the machine. Now that pilots regularly use belts, it is a small step to a "conning tower" with mica windows.

It would appear, then, that the best all-round efficiency will be obtained with a non-lifting tail biplane and a slight dihedral angle. I hope shortly to publish a series of articles dealing with the design and construction of such a machine.



## The Valkyrie Monoplane.

The Valkyrie monoplanes have been doing very good work, in a quiet sort of way, for some months now; but they have suddenly become prominent owing to the great success of the 50 h.p. Gnome-engined racing machine, on which Mr. Barber has been doing some excellent high and cross-country flights. He has now taken it down to Shoreham, where he intends to do some exhibition flights.

It is this machine (Type B) which is now illustrated by proper scale drawings for the first time.

The machine is distinctive both in design and construction. Since the advent of the Voisin "Canard," more attention has been paid to "tail first" machines, and it is therefore interesting to note the fact that the Valkyrie, or A.S.L., as it was then called, made its first trials on Salisbury Plain before the Canard was more than a vague chimera in its designer's brain.

The main plane is single-surfaced, with one spar at the leading edge and another one foot from the rear edge, and it has flaps for stabilising.

There is a decided dihedral angle, the spars being bent to a downward curve towards the ends.

The fuselage does not exist, its place being taken by the combined chassis and outrigger, which carries the whole machine. This consists of two "panels," each stayed and strutted so as to be rigid in itself, but each independent of the other, in order to keep the machine flexible. This is a very good point of design, but leads to a quaint appearance when running on the ground, as the whole machine appears to be continually in a state of "wobbliness" in all its joints.

The joints are made with special castings of "Valkalium," and are very ingeniously designed.

At the front is a "super-lifting stabiliser," adjustable, when the machine is at rest, for the weight of the pilot. Below it is the elevator plane. Each "panel" of the outrigger is covered at its front end to form a blinker, which is of great importance: the area must be carefully adjusted to give the machine directional stability without being large enough to affect it in a side-gust. In this machine the two fins together are of  $3\frac{1}{2}$  square feet area. The rudders are on outriggers behind the main plane.

The power plant consists of a Gnome engine driving a Chauvière propeller, the centre part of the main plane having its leading edge recessed to leave room. The engine is carried on bearers, which also carry the pilot. These bearers are in turn supported by cross-bearers which spring from the outrigger. The control is by universal lever, the joint being of a very good type. The whole machine is very light and fast, and climbs excellently. It is also very stable, as is proved by the fact that the pilot habitually makes circuits with his arms waving in the manner of one doing "extension exercises."

Personally the writer would like to see, as an experiment, a large fin fitted immediately below the pilot. This should make the machine easier in directional control, and might also put a stop to any slight rolling which might occur. This, however, is still rather a moot point.

The accompanying photograph was secured when the machine was on its way to Brighton. It shows the Valkyrie travelling on its own wheels from Hendon. One of the strong claims of the Valkyrie military design is that it can travel anywhere on its own wheels. The planes, which are attached to the sides, can be fitted in a few minutes, and the machine is then in flying order.

Thanks are due to Mr. Barber for his lucid explanation of the points of the machine.—P.K.T.

### A Point worth Noting.

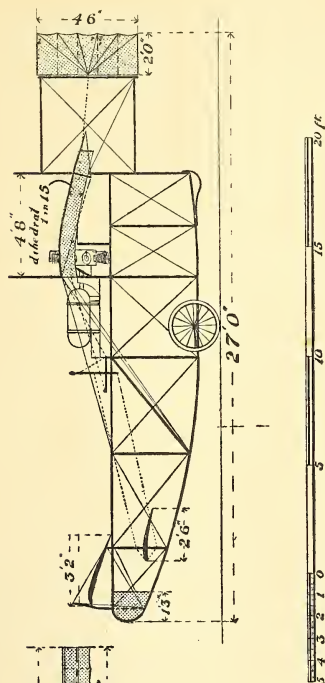
There is a point about the R.E.P. engines which is worthy of note—they are fitted with dual ignition. Consequently an aviator who is forced to land in the country can pull his engine over a few times and then start up on the switch, instead of being compelled to round up some rustics to hold the tail and probably damage it while he does his own propeller swinging. In any case, propeller swinging is a clumsy and most dangerous way of starting up an engine, though everyone seems to prefer it to the more practical and safe method of starting on the switch.

### Good Work in Austria.

On the 22nd Lieut. von Umlauff, of the Austrian cavalry, left Vienna on an aeroplane at 4.40 a.m., and landed at Buda-Pesth at 6.58 a.m., or just half the time taken by the Orient express over the same distance.



The Valkyrie at the Marble Arch travelling by road to Brighton, towed by Mr. Barber's well known Ford Car.



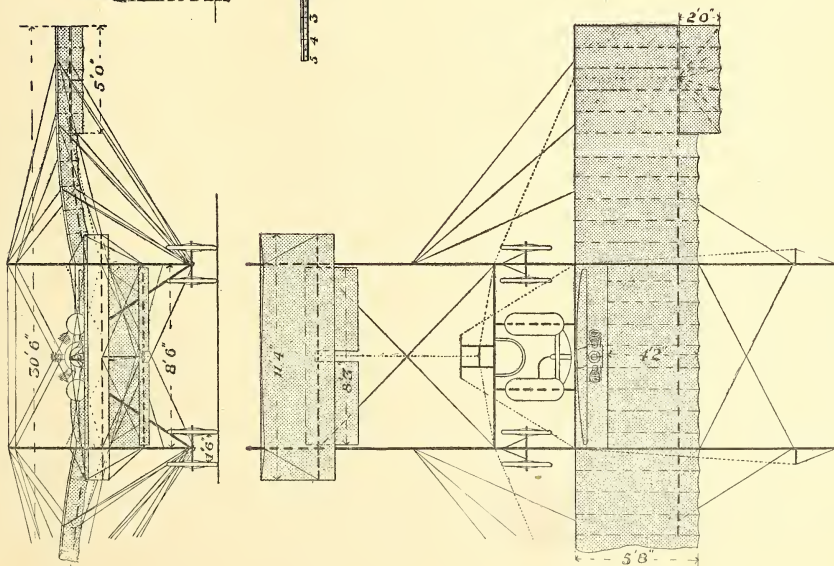
## "VALKYRIE" MONOPLANE. RACING TYPE.

<i>Surface of Main Planes</i>	160 sq. ft.
" <i>Stabiliser</i>	57 "
" <i>Elevator</i>	21 "
" <i>Rudders</i>	18 "

*Weight (without Pilot): 575 lbs. Speed: 63 m.p.h.*

*Engine: Gnome, 50 HP, 1200 r.p.m.*

*Propeller: Chauvière, 8'0" diam. x 5'5" pitch.*





### The Alexander Prize Competition.

The Secretary of the Aerial League, Mr. Stephen A. Marples, writes: "I beg to inform you that the entries for the Alexander Prize Competition close on the 30th inst. All who have not sent in their entries for this competition are reminded of the proximity of this date. Entries for the above should be sent to the Secretary, the Advisory Committee for Aeronautics, Bushey House, Teddington, Middlesex."

### One Good Point at Least.

As so much interest has been taken by the public in the new navy airship, it is pleasing to find that the fabric used in the manufacture of the gas bags was the famous "North British" fabric, manufactured by the North British Rubber Company, Ltd., of Edinburgh. This is still another testimonial to the high quality of this well-known firm's productions, for even if the machine be useless, it is, at any rate, certain that only the very best material has been used in its construction after long and searching tests.

### The Manchester Aero Club: Model Section.

Most of the members of the Model Section attended a special general meeting on Tuesday, 20th inst., at the Manchester Aerodrome, and elected officers for the coming season. After this there was a flying competition, and some very good performances were put up. One model, made by Mr. A. Wood, on several occasions flew between two and three hundred yards, on one occasion clearing over some neighbouring works outside the Aerodrome.

### Conisborough and District Aeroplane Society.

Mr. T. S. Wallis, the hon. secretary, writes that on Coronation Day the society had their 28-ft. glider out, when it carried three passengers to a height of 20 ft. This presumably was a towed flight.

### The Brighton and District Aero Club.

The workshop, which has been fitted up by the members, was opened on Tuesday last week. There was a large attendance, and the members were very enthusiastic. The club is holding a competition in about a fortnight's time. Any person who would like to enter is asked to communicate with the hon. secretary, Mr. C. Bennett, 41, Preston Street.

### The Aero-Models Association.

An open model flying meeting was held by the South-Eastern Branch of the Aero-Models Association, on the Golf Links, Mitcham Common, on Saturday, June 17th. There were three events: (a) For models rising from the ground; (b) duration; (c) distance. In the first, Mr. George Rowlands' machine, after rising in a space of two feet, flew for 169 yards and won first prize. Mr. S. L. Cox won the

duration contest, with a flight of 67 seconds, and Mr. C. B. Ridley the distance race, with a flight of 542 yards.

A similar competition will be held on the Golf Links, Mitcham Common, on Saturday, July 29th, further particulars of which will be published in due course. Hon. Sec.: W. H. Kansley, 9, Aspinall Road, Brockley, S.E.

### Some More Opinions.

E. C. Gordon England, Esq. (certificated aviator), writes: "Congratulations on your excellent paper. All aviators read it because it avoids so-called technical articles by long-winded theorists and obtuse mathematicians, and publishes the week's news with accuracy."

G. F. Campbell-Wood (Secretary the Aero Club of America), by cable: "Congratulations AEROPLANE."

T. S. Harvey, Esq., Menaggio, Italy: "I am delighted with THE AEROPLANE, which fills up a void which has ached for two or three months."

J. S. Gordon, Esq., the Scottish Aeronautical Society: "My heartiest congratulations on the excellence of the matter contained in your new weekly. Wishing you every success."

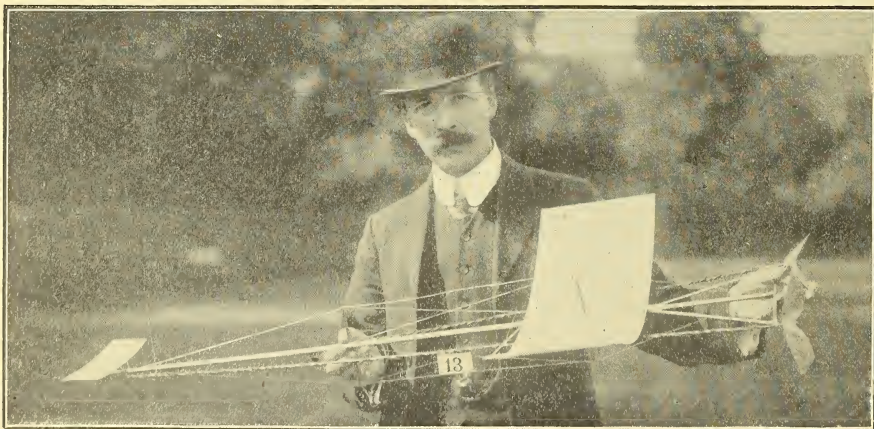
The Times:—"THE AEROPLANE has just appeared, and promises to fill a gap which is noticeable in other similar publications. It devotes a good deal of space to 'the things which happen when one is flying,' and the scientific reasons, generally ignored, for doing or abstaining from doing certain things with one's machine. Its editorial resolve to tell the truth without regard to the feelings of advertisers is worthy of all encouragement."

H. Hewitt Griffin, Esq., F.S.S., M.J.L., the well-known statistician:—"I only procured No. 1 of THE AEROPLANE on June 13th, as inquiries for No. 1 were met with 'Sold out.' Congratulations on and best wishes for the 'youngster.' I particularly like 'The Week's Work'; it tells us what is being done at the 'air' resorts. As I saw Farman make one of his early records at Issy, November, 1907, I was 'on the scene' pretty early, as I was in cycle racing (June 26th, 1899). Good luck!"

Percy Richardson, Esq. (Sheffield Simplex Motor Works, Ltd.) writes: "I wish to take the opportunity of wishing THE AEROPLANE every success. I think the lines you are running on are very attractive, and I quite agree that a chatty, practical paper such as you have produced is what is required to actually raise the genuine sort of enthusiasm that I am afraid aviation at the present moment lacks."

### Our Aviators.

The series of articles on "Our Aviators" has been temporarily interrupted by pressure caused by the "European Circuit" and the "Gordon-Bennett." It will be continued as soon as possible.



A FINE MODEL.—Mr. E. W. Twining of Ealing with one of his big racing models.



## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

### The Danger of "Banking."

(This has no connection with recent financial episodes.)

SIR,—Much has been said of late for and against the danger of the *voil plané*, and it was shown fairly conclusively by Mr. Turner in the first issue of THE AEROPLANE that there is not that danger existing as is generally supposed, so long as it be brought about in the correct manner.

May I draw the attention of your readers to what I consider a real danger, viz., the danger of "banking."

It is the usual practice of all qualified aviators to take their corners at more or less great angles, this, of course, being effected by causing the outer wing to rise, giving it a greater lift than the inner one, and consequently throwing more strain upon it.

Then, again, it is quite obvious that the outer wing takes the corners at a far greater velocity than the inner one, the outer extreme end on a monoplane (to which these few lines particularly refer) probably travelling in the region of 70 to 80 miles per hour, whereas the inner tip might, and, in fact, will, be travelling at a speed far below the normal flying speed, thus causing a still greater strain on the outer wing.

And, lastly, there is the centrifugal force tending to throw the whole machine outwards, so that, in order to keep on its normal path, it must be subjected to yet a greater strain.

So we have practically all the strain on one wing, or, rather, on the stay wires of that one wing. Here, then, lies the point of the danger.

It is customary to turn always to the left, and in a biplane this means that the banking comes the opposite way to that in which the propeller revolves, and so the same wing will continually have to bear this strain.

Here, then, is the danger which the "trick flier" runs—he who revels in taking corners at 45 degrees; and should a strong gust of wind strike the strained wing, there is at least a chance of a total collapse of the same, after which the pilot as well as the machine will require slight adjustments before any more flights may be attempted.

Bexhill

G. ALAN HILL REID.

### Popular Ideas.

SIR,—With regard to the ignorance displayed by many people, I may mention a few instances that I have personally experienced. At Hendon, when a pupil is rolling, the ignorant spectator frequently says: "See, that fellow is playing motors; why doesn't he get up?" or "He can't rise; that machine is no good."

The other day Mr. Hubert, in his shirt-sleeves, went up on a Farman. "There goes the mechanic to try the engine," says a bystander.

Pronunciations are awful. "Look, can you see that 'Blearoid' (or it may be 'Valkry') aeroplane doing a volplane dip," for instance.

Again, many people think aeroplanes need a high wind to fly, believing them to act as kites. As one of your correspondents remarked, numbers of persons classify flying machines under the headings "Aeroplane" and "Biplane."

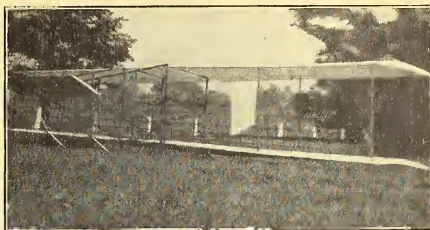
London, N.

A. CURTIS.

### More Glider Tribulations.

SIR,—I was extremely sorry to hear of the disaster to the Dundee Aero Club's glider, also to the cow, and can imagine the feelings of the members, as an experience somewhat similar has occurred to our glider.

We started to erect the glider on Whit-Monday, and, as it was not ready for trials before 7 p.m., there was not much time left, but three of us managed to get a couple of short glides each. The evening's gliding was finished when Mr. Harry Nicholas, who has helped in the construction, on his last glide kept his elevator too high, causing the machine to rise and so lose its momentum, with the result that it "panicked" rather hard. The only damage was a split footrest.



The Birmingham Aero Club's glider.

We then stored the glider under a large beech tree, the branches of which spread out above and beyond the wings for several feet, the tree forming an excellent hangar.

On returning on the Friday night to prepare the glider for the Saturday, you can imagine our consternation when we found the fabric torn off the ends of the bottom planes, and one or two holes in the top plane. This was caused by a flock of sheep walking on the bottom planes, while some bullocks, not being able to walk on the planes owing to the wires, had to content themselves with playfully pushing their horns through the top plane. After going over the damage, we had to put out of our heads the thought of gliding, for that week-end at any rate, and this week, although the glider is now repaired, we have not been able to do any flying since, owing to the weather last Saturday and Sunday, which has been more suitable for swimming. We hope shortly to get some good results.

G. HADDON WOOD

(The Birmingham Aero Club).

### Concerning Aeroplane Controls.

SIR,—I am glad to see that you are giving plenty of news, as one cannot trust the daily papers, and also that you do not consider a Gnôme engine essential.

There have been many accidents in which an aviator has been coming down steeply, and the machine has suddenly dived. Sometimes the machine has dived after the aviator has attempted to straighten out. Many theories have been advanced to account for these accidents: the gyroscopic effect of the motor, illness of the pilot, overstrain of machine; but I think that the chief cause is the type of control in use. In machines in which the pilot is not strapped, the effect of descending fast or straightening out suddenly is to jerk the pilot forward out of his seat. He then falls on the control lever, which, being pushed forward, makes the machine dive. As the machine is often by this time near the ground, the pilot has no chance of saving himself. Beginners also try to climb too steeply for the same reason. Designers and aviators may think it worth while to consider the idea.

Another point generally overlooked by designers is the balancing of the rudder. It must be rather tiring work steering a fast machine not fitted with a balanced rudder for a few hours round a small circuit.

Liverpool.

BERNARD WHALLEY.

### The Gordon-Bennett Race.

SIR,—Many people are asking when are the British eliminating trials to be contested. It is greatly to be feared that the answer is, "Not this year, at all events." It is surprising that so competent a body of organisers as the R.Ae.C. Committee should not realise how important is impartial selection by officially observed flights, and not by sentiment, and perhaps a desire to keep in with the powers that be. It is hard to comprehend why a Wright machine should be chosen to represent us in a contest where speed is of paramount importance, and in which even the too h.p. Gnôme-Bleriot may exhibit serious shortcomings.

Mr. Howard T. Wright tried to convince me recently that this machine was the only one which had any chance in the forthcoming contest. On this point I must differ, for although the racing Bleriot has plenty of power at its command, it is not designed with a view to reduction of head resistance.

Personally, I have great hopes for the success of a certain extremely cleverly designed French monoplane, which has beaten the records of the 100 h.p. Gnome-Blériot on numerous occasions, using an engine of far less power. This is undoubtedly due to the unnecessarily high resistance of the forepart of the Blériot machine.

The Committee of the R.Ae.C. goes on to say that the third representative shall be chosen (at the last moment!) from some half-dozen well-known aviators, whose names they publish. Surely the only fair method of selection is an eliminating contest open to any British aviator, and I hope to see this method adopted in the near future.

Much was said of the shortcomings of the Belmont Park Committee last year, but I am beginning to think that some of these remarks are now applicable to ourselves. Perhaps the same agencies are at work as those which were instrumental in the preventing of flights of a certain British aviator at an important demonstration, where he might have displayed to great advantage the capabilities of his original machine.

PLANETORQUE.

### Models in Liverpool.

SIR,—Please accept my congratulations on the two excellent issues of THE AEROPLANE. Long may it flourish, but, sir, please do not suddenly develop into a monthly journal. A week is quite long enough to wait, thank you.

Mr. Evans, in last week's issue, No. 2, criticises Mr. T. A. Dring's article respecting the vortex principle of flight. I have read the article in question and think it far from "far fetched." On the contrary, I believe he is quite right.

I have myself held a fly and watched its wings rotate at such a rapid rate that I tremble to think of the fate of any aviator who rose in the air in such a machine, unless it had other supporting surfaces, on which, in case of accidents, such as a bird striking against the vortex screws and smashing them (and itself), it could safely glide to earth.

It is very probable that Mr. Dring has thought of this, however, and prepared for it.

My main purpose in writing was to congratulate you upon the excellent and witty way in which sound common sense and sparkling humour are combined. It does you great credit, and I for one feel all the better for a hearty laugh over my reading.

I should be neglectful if I failed to tell you how an old lady viewed my model aeroplane (three feet span). I explained its points to her clearly (as I thought), but when I had finished, she gently asked, in an awed sort of voice: "But won't you be afraid to go up in it?"

It is my intention to form a model club here, and I have already spoken to a leading Liverpool gentleman who is closely connected with the Aero Club here, and he has left the matter in my hands, so I trust that local enthusiasts will communicate with me without delay. There is still time to get a club on its legs before the close of the season.

I trust you will devote a page or two to models, and thereby earn the gratitude of many besides myself.

Thanking you for placing so splendid a journal before the public, and again wishing it every success.

ALEX. C. PUGH.

39, Brook Road, Bootle, Liverpool.

### A Useful Model.

SIR,—The following details of a successful model may be of interest to your readers:—

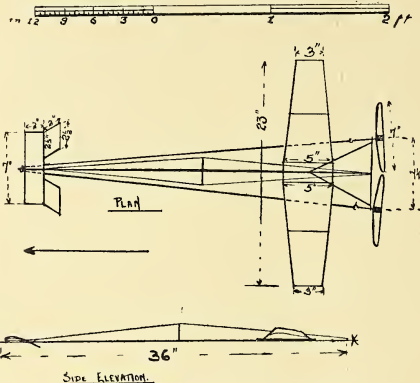
The model is 3 ft. long, exclusive of propellers, by 23 in. span, driven by twin propellers 7 in. diameter, fitted with five strands 3-16ths in. strip elastic each.

The elastic is lubricated with a mixture of equal parts of French chalk and common soap powder mixed to a very thin paste with hot water. This gives about 700 turns to the propellers and a duration of 40 seconds in the air.

The fuselage, which is 3 ft. long, is made of white pine,  $\frac{1}{4}$  in. by  $\frac{1}{4}$  in. at centre, tapering to 3-16ths in. wide by  $\frac{1}{4}$  in. deep at ends. The diagonals and propeller bracket pieces are 3-16ths in. by  $\frac{1}{4}$  in., sandpapered to stream-line section.

The wire straining posts are made of No. 20 W.G. tempered steel wire. The straining wires are ordinary flower wire, with wire strainers made of sheet tin, after the fashion of tent-rope strainers. The propeller bearings are made of 22 W.G. tempered steel wire, bent to form an eye.

The main plane is formed of wood spars  $\frac{1}{4}$ th in. by 3-32nds in., with 22 W.G. tempered steel wire ribs. There is a gap of 2 in. in the centre, which makes the effective span 21 inches. Each wing is 10 $\frac{1}{2}$  in. by 5 in. at middle by 3 in. at tips.



Scale drawing of Mr. Gordon's Model.

The elevator is 7 in. by 2 in., with ailerons 2 $\frac{1}{2}$  in. by 2 in., and is made of 22 W.G. tempered steel wire, with one centre rib of 3-16ths in. by 3-32nds in. flat cane. The planes are covered with lawn, and airproofed with a thin paste made of flour and boiling water. They are fastened to the fuselage with elastic bands, and are given a slight dihedral angle.

The propellers, 7 in. by 1 in. by  $\frac{1}{4}$  in. at middle, are made of 1-16th in. satin walnut, and steamed to a pitch of 45 degrees. Three coats of shellac varnish will keep the pitch exact in all sorts of weather. The shafts are made of 20 W.G. tempered steel wire, and the bearings are a small tin washer and two steel beads on each.

The fuselage will be greatly strengthened if given a coat of thin glue and three of shellac varnish.

The model is an extremely high flier, which is no doubt due to the use of the ailerons on the elevator. Directional steering is also controlled by the ailerons.

Glasgow.

J. S. GORDON

## The Aeroplane, 166, Piccadilly, W.

Telegraphic Address AILXON, London.

Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

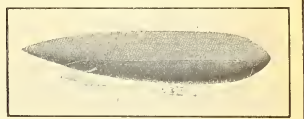
THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
	s.	d.		s.	d.
3 months, post free	1	6	3 months, post free	2	9
6 "	3	6	" "	5	6
12 "	6	6	" "	11	0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed. "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsgagents, each issue can be obtained direct by forwarding remittance as above.

**E. T. WILLOWS · L<sup>TD</sup>**  
**AERONAUTICAL ENGINEERS**  
**SPECIALITY: WILLOWS' DIRIGIBLES**  
 24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



## ACCESSORIES



are a feature of our business. Everything required for Aeroplane Construction is in stock ready for immediate delivery. "AVRO" parts are designed upon practical lines by practical flying men.

**BUY YOUR PARTS FROM PRACTICAL MEN AND ENSURE DEPENDABILITY.**

Telegraphic Price List Post Free.

Every day sees more successful flights made on the "Avro" Biplane. Britain's most successful Aeroplane.

**A. V. ROE & Co.,**

THE AVIATORS' STOREHOUSE,  
 Brownsfield Mills, **MANCHESTER.**

Telegrams: TRIPLANE. Telephone: 698 CENTRAL.

**P**ROPELLERS. — "Avro" Propellers of proved efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines. — A. V. ROE & Co., BROWNSFIELD MILLS, MANCHESTER.

**M**ACHINES. — "Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market. — A. V. ROE & Co., BROWNSFIELD MILLS, MANCHESTER.

**T**UITION. — £50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. See news columns. — A. V. ROE & Co., BROWNSFIELD MILLS, MANCHESTER.

**A** RESPONSIBLE position is vacant in an old-established firm of Aeronautical Engineers with flying grounds, machines, and several valuable patents. Salary, £200 to £300 per annum, according to investment. Strictest investigations. Solicitor's or Banker's reference required. — Write MALLOWS & Co., ADELPHI HOUSE, STRAND, W.C.

### CLIFT'S AVIATION MAPS.

**A Necessity to Cross Country Fliers.**

Prices (according to country covered) on application to Eric Clift, c/o "The Aeroplane," 166, Piccadilly, W.

THE NEW TYPE B

## VALKYRIE MONOPLANE

HAS NOW BEEN TESTED AND HAS  
 PROVED AN UNQUALIFIED SUCCESS

**Especially designed for Military Service.**

THREE TYPES: 40-80 miles an hour.  
 From £280.

ALL THREE TYPES FLYING DAILY AT HENDON.

Tuition Free to Purchasers. Particulars on request.

### THE AERONAUTICAL SYNDICATE

Established March, 1909. L<sup>TD</sup>.

At the Flying Ground, Collindale Avenue,  
 West Hendon, N.W. (5 miles from the West End)

Telegrams: "AEROVALKY, LONDON."

Telephone: KINGSBURY 24.

**50** H.P. ALVASTON for sale, perfect condition, fresh from makers; replacing by more powerful type; price £95. — MALLOWS & Co., ADELPHI HOUSE, 71/72, STRAND, LONDON, W.C.

**35** H.P. GREEN AERIAL MOTOR, latest make, new, identical with 24-hour non-stop engine, price £200. Fitted in Dirigible, or Aeroplane, £500 complete. — C. G. SPENCER & SONS, 56a, Highbury Grove, London, N.

**A**EROPLANE CLOTH. Spencer's Balloon Fabric. Best and Cheapest. Width 44 inches. Length 60 yards per piece. Price 1/- per yard Unproofed, 1/6 per yard Waterproofed. Delivery from Stock. Used on many well-known Machines. — C. G. SPENCER & SONS, 56a, Highbury Grove, London, N.

**L**ANARK AERODROME, Lanark, N.B. — Tuition by Certificated Aviator on genuine Blériot Monoplanes; Passenger Flights and Flight Exhibitions. — Terms on application to W. H. EWEN.

**A**EROPLANES, motors, castings, engines from 10 H.P., woodwork, coverings, castings, propellers (below); quotations; many second-hand. Miniature aeroplane motors, part machined, 9/9; many sizes, cheap (below). Illustrated list, 4d. — LITTLEOVER WORKS, DERBY



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

THURSDAY, JUNE 29th, 1911

No. 4.



Builders of the Celebrated

*"Bristol"*  
*Aeroplanes.*

As supplied to H.M. War Office  
:: and to the Russian Army ::

Sole Agents in Gt. Britain & the Colonies  
for the famous "GNOME" Engines

The Company's Flying Schools, at Salisbury Plain,  
Brooklands, and Eastchurch, are the finest in Gt. Britain

PERMANENT STAFF OF  
15 CERTIFICATED PILOTS.

Special Terms to Navy & Army Officers.

The British & Colonial Aeroplane  
Company, Ltd.,

Clare Street House :: :: BRISTOL

Telegrams—  
Aviation, Bristol."

Telephones 2 P.O.  
74 National. 3074 National.



A Bristol Aeroplane over the Avon Gorge.

"THE AEROPLANE," JULY 6, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY, ("Aero-Amateur")

1<sup>st</sup>  
WEEKLY

Vol. I.]

THURSDAY, JULY 6th, 1911.

No. 5

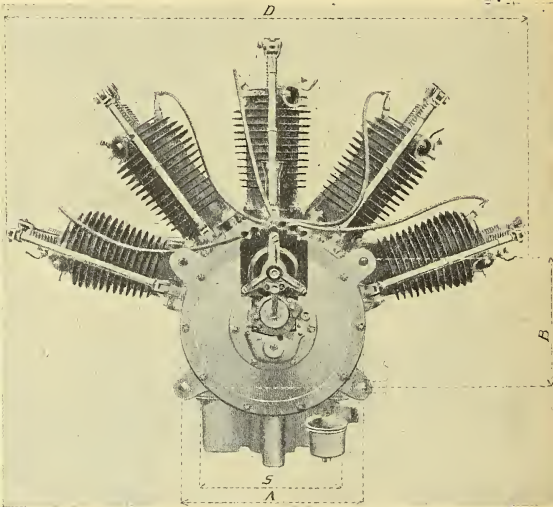
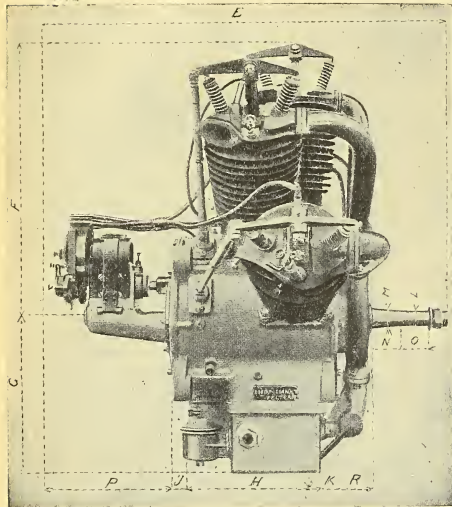
## At the First Pylon.



Chevalier rounding the Western Pylon in the Gordon-Bennett Race.

SMITHSONIAN INSTITUTION OCT 27 1959

# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40/50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

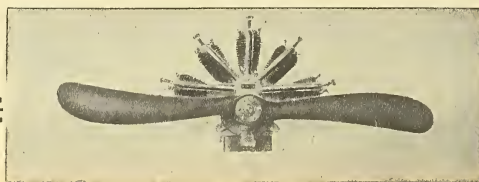
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





# CONTENTS.

	PAGE
EDITORIAL OPINIONS .....	99
THE GORDON-BENNETT RACE .....	103
SCENES IN THE GORDON-BENNETT RACE .....	107
AIR CURRENTS .....	109

	PAGE
THE EUROPEAN CIRCUIT .....	110
THE WEEK'S WORK .....	113
CORRESPONDENCE .....	118

## Editorial Opinions.

### A Matter of Money.

The "Circuit of Europe" is nearly over and the "Gordon-Bennett" is done. The competitors have been fêted; some of them have won money, more of them have not. A good deal of money has been spent with hotel-keepers, speculative aerodrome proprietors, and various other people who do nothing in particular to develop the progress of aviation (except, of course, the few permanent aerodromes such as Eastchurch, Shoreham, and Hendon), and the net result is that we know just about what we knew before, namely, that an aeroplane can travel over quite long stretches of very bad country in very bad weather, and that aeroplanes specially built for the purpose can travel at speeds of somewhere between eighty and ninety miles an hour.

A good deal of ephemeral excitement has been caused in certain localities by the passage of the competitors in the "European Circuit," but one is apt to wonder whether any new recruits have been enlisted into the ranks of aviators by these performances. No doubt a very considerable number of sporting young men have been filled with a desire to become aviators, but the proportion of them who can afford to do so must be comparatively small.

So long as aeroplanes sell at prices approximating to £1,000 there cannot be very much chance of selling them in large quantities, and the time has now come when, if the sport is to progress, as it should do, it is absolutely necessary that the sportsman who wishes to fly should be able to do so at a cost within the means of the average sportsman.

Consider the matter this way. The average man who hunts fairly consistently probably owns a couple of hunters which cost him, say, from 80 to 100 guineas apiece; their keep may cost him £3 a week, but it is probably less, and his groom probably costs him about 30s. a week. On top of that he has the cost of boxing the horses to distant meets, and various other incidentals which may run him in to, say, another £3 a week, so that his initial outlay will be about £200, and his running expenses somewhere in the region of £7 a week during the hunting season. Now that is very much the class of man on whom sporting aviation will depend in future.

Apart from the sporting side there is, of course, the military side, and military aeroplanes must be, almost of necessity, bigger, faster, and generally

more expensive than sporting aeroplanes. Consequently, it is quite fair to expect the war departments of the various nations to pay proportionately.

### The Dividing Line.

It seems, however, that the time has now arrived when, as the writer ventured to predict elsewhere a year or so ago, a distinct line must be drawn between the military aeroplane and the sporting aeroplane—a line as distinct as that which exists between the warship and the steam yacht. Of course, a millionaire may spend as much on a steam yacht as a nation would spend on a battleship; but, averaging it all round, it may be assumed that a fairly comfortable steam yacht of moderate size costs considerably less to build, and run, than a destroyer of the same tonnage; and reasoning from this analogy we may assume that the sportsman is not going to pay as much for his sporting aeroplane as the nation is going to pay for its war-planes.

To return to the analogy of the hunting field, the number of men who can afford to pay and keep five 200 guinea hunters is very small indeed; but there is an astoundingly large number of men who can afford to keep three, or even four hunters, costing between 75 and 100 guineas apiece. That is to say, that while few men can afford an initial outlay of 1,000 guineas for their mounts, quite a fair number can afford a matter of 300 guineas.

It seems fair to assume that the mechanically-minded sportsman, though his tastes lie in the direction of engines rather than of horse flesh, will be very similarly circumstanced financially, and, if the sport is to become a sport, prices must be reduced.

### The Aeroplane for the Average Aviator.

Any aeroplane manufacturer will admit that if he could buy an engine which would keep an aeroplane in the air for an hour on end with a fair amount of certainty, and would cost somewhere between £100 and £150, he could sell the whole aeroplane for somewhere between £300 and £400, provided, of course, he was assured of a market for it; and most engine manufacturers will admit also that they could produce an engine of moderate horse-power at that price if they could make them in dozens, instead of in ones and twos.

Of course, the aeroplanes would be single-seaters, or, at any rate, only capable of carrying two people

for a limited period, and the engines would be of comparatively low horse-power; but that is all that is really required by the sportsman, and manufacturers of all kinds may rest assured that, if they will take their courage in both hands and lay down their engines and planes by the dozen, so as to produce them cheaply, the market is there waiting.

One hears from pessimists a fear that aeroplane accidents will prove a setback to the sale of aeroplanes. To a limited extent this is true, but it is much more true so long as the prices of aeroplanes remain high than it would if they were lower. The man who can afford the thousand guinea aeroplane is generally either a man with large estates and corresponding responsibilities, or a very rich young man who is well looked after by parents, trustees, guardians, or similar impediments to his sporting proclivities, and, in consequence, all kinds of imaginary dangers are conjured up to prevent him from flying. On the other hand, the aeroplane at £400 or less brings into the field men of less responsibilities, and younger sons about whose needs nobody has any particular anxiety.

When once men of this class are able to buy aeroplanes in quantities, and fly them regularly, people will begin to realise that aeroplaning is not an exceptionally dangerous sport, and, as the writer has pointed out time after time, in all sorts of places, by far the majority of the fatal accidents which have occurred have been absolutely avoidable.

**Greater Dangers Elsewhere.** Few people realise the mortality of the hunting field, because the halfpenny Press (Bless it!) takes no interest in hunting; but an Irish friend of the writer, who has probably hunted more than most people, estimated quite casually that one person per week killed during the hunting season would be quite a fair estimate for Ireland alone, leaving out of account minor accidents which leave the victims lame for life. Only recently, in a review of the last hunting season in an English sporting paper, it was stated quite casually that in one week two men and a woman were killed in the hunting field in England; yet the daily papers did not blazon forth posters advertising "The Horrors of Hunting."

In time the papers will cease to pay any more attention to aeroplane accidents than they do to hunting accidents, and then the ordinary man will be able to realise that aeroplaning is, after all, only an ordinarily risky form of sport.

The proof that the right men are waiting to take part in the sport is provided by the number of men who join aviation schools simply with the idea of getting their Pilots' Certificates, and with the full knowledge that their circumstances will never allow them to pay £1,000 for an aeroplane; but give those men the chance of buying an aeroplane at something like a reachable price, or allow them to hire aeroplanes at an inclusive cost per annum, and the sport will at once find hundreds, and even thousands, of recruits.

**A Handsome Gift.** On Friday of last week it was announced in most of the London papers that Mr. H. Barber, the inventor, designer, and chief pilot of the "Valkyrie" monoplanes, had presented to the Government four "Valkyrie" machines.

Mr. Barber is deserving of all praise for his patriotic action, for he has worked for years on these machines, developing ideas of his own, and succeeding at last against heavy odds in making the machines fly, and fly well, although they owe nothing in their design to imitation of any other existing machine.

For military and naval purposes these machines have distinct advantages in that they certainly do allow the pilot a clear view in every direction. In addition to this, they are so designed that they can be easily transported by road on their own wheels behind a motor car in such a state, that a few minutes after arrival at any desired point the wings can be attached and the machine ready to fly. Owing to the long skids and general construction they are also well adapted for landing on irregular ground, and if one should be compelled to land in a small field in which there was no room to stop the machine from running into a ditch or fence, these skids would certainly behave very much better than those on any other existing type of machine.

For naval purposes the machines are also particularly suitable, in that the same design of skids makes them particularly easily adaptable for use with floats. It should be quite possible to launch one of these machines from an easily erected platform on a ship, and after its flight the machine could alight on the water, and be hauled on board with comparative ease. Here, again, the quick detachability and attachability of the wings is an advantage, because as soon as a machine was retrieved from the water the wings could be taken off, and it could be stowed in a comparatively small space.

The writer happens to know that several officers of the Air Battalion have been taking a lively interest in the proceedings of these "Valkyrie" machines for some considerable time, and have even expressed their desire to experiment with them. Consequently the gift will be received with considerable satisfaction by the active fliers of the Air Battalion who already suffer, as has been noted in *THE AEROPLANE*, from a lack of machines.

Mr. Barber, in a very sporting spirit attached no conditions whatever to the gift, but merely suggested that two of the machines might be handed over to the Navy for experiments on water, and it is satisfactory to note that the Government has acted on this suggestion, so that the Navy also will have the opportunity of giving the machines a fair trial.

**As to "Voluntary Contributions."** So far as the Government itself is concerned, it is, of course, wise in taking everything it can get for nothing; but, as a matter of principle, it is altogether wrong that Government departments should be supported by voluntary contributions as if they were hospitals or charity schools. The same objection exactly applies to the loan of training machines by Mr. Frank McClean to the naval officers at Sheppey, and to the training of those officers, and a couple of military officers by Mr. G. B. Cockburn.

Of course, it is ultimately for the good of the country that Army and Navy officers should have had machines to work with, and that officers should have been thoroughly well taught by a man who

probably knows as much about flying as any half-dozen exhibition fliers put together, and all honour is due to such gentlemen as Messrs. McClean, Cockburn, and Barber for their patriotism; but, nevertheless, the principle is wrong.

As many writers have pointed out, a proper aerial fleet is needed. If that fleet is needed, properly equipped factories must exist to produce it, and if those factories are to come into being they must, at present, depend very largely upon Government orders for support, and it is, therefore, the duty of the Government to buy machines from the aeroplane factories instead of accepting them as free gifts.

It is understood that in some quarters an idea

exists that the bulk of the Army and Navy aeroplanes will eventually be built in a Government factory, and not bought from private constructors. Quite apart from the eccentricities of design and workmanship perpetrated in the average Government factory, it is economically unsound in our present social state to refrain from supporting private enterprises. It is to be hoped that the authorities will not countenance the "freezing out" of aeroplane manufacturers from Government orders, but will do their duty to an enterprising and far-seeing section of the community, by placing orders handsomely among makers of successful machines, as the French Government is doing.

#### Concerning the Military Aeroplanes.

The announcement is now officially made that four "Valkyries" have been accepted by the Government as a gift from Mr. H. Barber. Two of these are to be allotted to the Army and two to the Navy. The machines presented are:—

(a) One "Valkyrie" military passenger-carrying machine, with a 60-80 h.p. Green engine, suitable for carrying one heavy passenger or two light ones in addition to the pilot. Speed 40-50 miles an hour.

(b) One "Valkyrie" military single-seater school machine, fitted with 30 h.p. Green engine. Speed 40-50 miles an hour. A good strong machine for pupils.

(c) One "Valkyrie" single-seater with special 40-50 h.p. Green engine somewhat modified so as to give extra power. This machine resembles in many ways the Gnome-engined racer, and when tested recently by Mr. Barber, flew for 50 minutes at heights up to 1,000 feet, coming to ground only once during that period, and climbing as well as the Gnome-engined racer. So the Army, or Navy, will have a really fast machine with a British engine for the first time.

The above three machines have all actually been flown and are proved fliers.

(d) One "Valkyrie" military cross-country racer, built for a 50 h.p. Gnome engine. Speed estimated at 60 miles an hour, but considered by several good judges to be faster. Will be finished in about a fortnight.

Mr. Barber has also offered to the Government his services as a designer, constructor, and pilot, as far as his time permits. He intends to continue devoting his time to aeronautical research and experiments, and he is now commencing another and improved type of military monoplane in which his object is to secure automatic lateral stability equal to the longitudinal stability he has been so successful in finding.

The Aeronautical Syndicate, Ltd., who have built the Valkyries, will in future be under the management of Mr. Ridley Prentice, himself a certificated pilot of considerable ability.

#### How to Obtain "The Aeroplane."

A large number of readers of THE AEROPLANE have written complaining of the difficulty of obtaining the paper from bookstalls and newsagents. This is, unfortunately, a trouble which occurs with all new technical papers, for the papersellers, not being themselves interested in the subject, are not anxious to burden their stalls with more papers than they are obliged to keep. The remedy, therefore, is to tell the newsagent definitely that the paper is needed every week. He will then order copies to be sent from his wholesale house in London. If the paperseller is not amenable to reason, a simple method is to send a subscription to THE AEROPLANE (Subscription Department), 166, Piccadilly, W., and so ensure having the paper delivered by first post every Thursday morning.

#### Entries for the "Circuit of Britain."

The following entries have been received by the Royal Aero Club:—1. André "Beaumont" (Blériot); 2. Gustav W. Hamel (Blériot); 3. — (Blériot); 4. James Radley; 5. C. Grahame-White; 6. C. H. Greswell; 7. Robert Loraine; 8. S. F. Cody (Cody); 9. James Valentine (Deperdussin); 10. Pierre Prier (Bristol); 11. M. Tabureau (Bristol); 12. M. Tétard (Bristol); 13. E. C. Gordon England (Bristol); 14. O. C. Morison (Bristol); 15. D. Graham Gilmour (Bristol); 16. C. P. Pizey (Bristol); 17. B. C. Hucks (Blackburn); 18. Lionel Hollands; 19. Lieut. R. A. Cammell, R.E. (Blériot); 20. H. J. D. Astley (Universal Aviation Co. "Birdling"); 21. L. Bréguet; 22. L. Bréguet; 23. La Société Antoinette; 24. Védérines (Morane-Borel); 25. Verrept (Morane-Borel); 26. — (Morane-Borel); 27. Lieut. J. C. Porte, R.N. (Deperdussin); 28. A. V. Roe and Co.; 29. Stuart A. Hirst; 30. H. Wijnmalen (H. Farman); 31. John F. Benton; 32. C. T. Weymann (Nieuport); 33. Handley Page, Ltd.; 34. Sanders Aeroplane Co.; 35. Howard T. Wright.

The start will be made from Brooklands on Saturday, July 22nd, 1911, at 3 p.m., and competitors will alight at the Hendon Aerodrome. The aeroplanes will remain at Hendon on the Sunday, and the start for Harrogate will be made at 4 o'clock on the Monday morning.

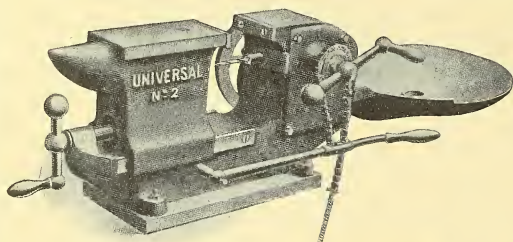


The 100 h.p. Blériot with which Hamel had his smash. Note how the wings have been cut off.



*The* **UNIVERSAL**  
**AVIATION CO., LTD.**  
 166, PICCADILLY, W.

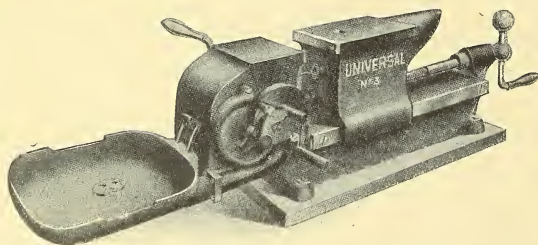
**"The UNIVERSAL" Combination Tool.**



No. 2.

Price, complete with  
 Patent Lever,

**£12 6s. 0d.**



No. 3.

Price complete

**£16 16s. 0d.**

**"THE UNIVERSAL"** is composed of the following:—Anvil, Vice, Brazing Pan, Cutter, Drill, Tube Vice, Emery Wheel, Beak.

The No. 3 model is the more powerful one, but the No. 2, weighing only 155 lbs., is the more popular with aviators, being used by the War Office, Howard T. Wright, O. Morison, Tabuteau, Tétard, Gordon England, etc., etc.

**"Birdling" Fabric**: made of a new fibre. This fabric is hardly stretchable, and is untearable. 28½ in. width. Price per yard, 3/6.

A Special Discount of 10 per cent. will be given on all orders received during the current week only, and mentioning *The Aeroplane*.

## The Gordon-Bennett Race.

A REVIEW OF THE DAY'S SPORT, as seen and photographed by C. G. G.

It is always the unexpected that happens. America gets the Gordon-Bennett Cup back again, thanks to a Haitian pilot, born at Port au Prince and brought up in Paris, and to a French machine. France takes second and third places, and England, as she thoroughly deserved, was among the "also rans."

The sole and only consolation we have got is that the only British competitor to complete the course did it with a British engine. This is the more remarkable because, while practising on Thursday last, Ogilvie took a nasty toss which bent his engine shaft, so that on Saturday he had to fly with a brand new engine. That the engine held up for the distance is a feather in the cap of the Brothers Mort and their N.E.C. two-stroke motor. Ogilvie's "Baby Wright" was obviously too slow to compete with the French racing-freaks, but he flies it beautifully, and in a wind would have made a considerably better show.

The actual results for the 150 kms. (90 miles) were:—

1. Weymann (America)—1h. 11m. 36 1-5s. (Nieuport).
  2. Leblanc (France)—1h. 13m. 40s. (Blériot).
  3. Nieuport (France)—1h. 14m. 37 2-5s. (Nieuport).
  4. Ogilvie (England)—1h. 49m. 10 2-5s. (Wright).
- Chevalier (France) flew 10 laps in 37m. 56 2-5s. on a Nieuport.

### Before the Racing.

Before the racing began things were quite entertaining. During the early morning calm most of the racers were out, and their speed was something of an eye-opener to our British aviators, who are used to nothing better than ordinary biplanes and 60-mile-an-hour monoplanes. The Nieuports gave a particularly good impression, and were found to be noticeably faster than the Blériots; consequently M. Blériot set to work on two of his three racers and cut a metre off their span by the simple process of sawing off the ends of the main spars and covering in the ends left open in doing so.

About 8 a.m. Gordon England arrived on a Bristol biplane from Brooklands, coming to see the race, as an aviator should, by way of the air. He flew without map or compass, and found his way easily by well-known landmarks, but was brought down twice by a choked petrol-pipe. He told me afterwards that he had quite a comfortable journey otherwise.

Somewhere about 4 a.m. Collins Pizey, with Fleming as passenger, left the Bristol School at Amesbury to come to Eastchurch also. They had to come down near Basingstoke, and then landed at Brooklands for breakfast. From there Fleming took the helm, with Pizey as passenger, and, as the wind was then rising, they had a very rough time, being finally blown down at Rochester, where they left the machine and came on by car. Both were loud in praise of the Clift compass they had fitted to their machine, and found it most useful over the country from Salisbury to Brooklands, which is practically trackless for an aviator.

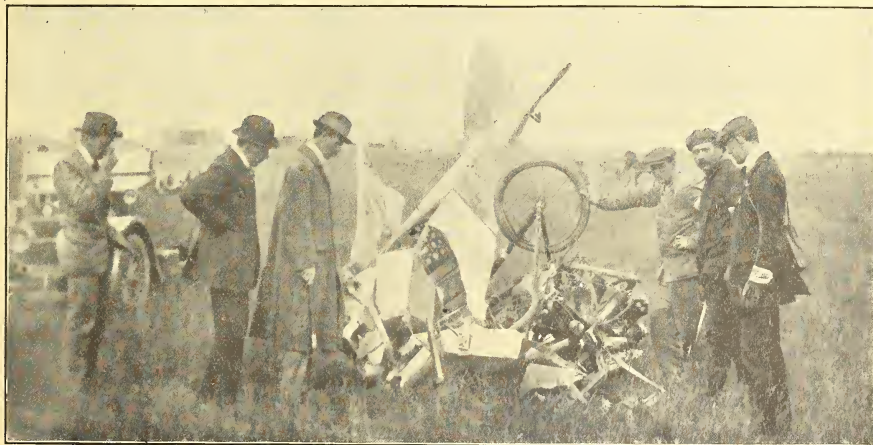
After breakfast the first man out was Hamel, who came out to try the truncated Blériot. I went out with him to see him start, and could see that Hamel was in for trouble. The machine appeared to me absolutely unsafe, for by removing the end 18 inches of the wing Blériot had also removed the most effective part of the warping portion. Hamel himself was evidently nervous about it, and though I have seen him start in very many previous flights, he has never shown any sign of nerves before. His chief fear was lest the chassis should collapse before he reached his flying speed of about 80 miles an hour.

In its altered form, with a span of a bare 22 feet, and an over-all length of 25 feet, its square cut-off wing-tips, and its stream-line fuselage, the machine looked more like the latter half of a dogfish with a couple of visiting cards stuck on it than anything else.

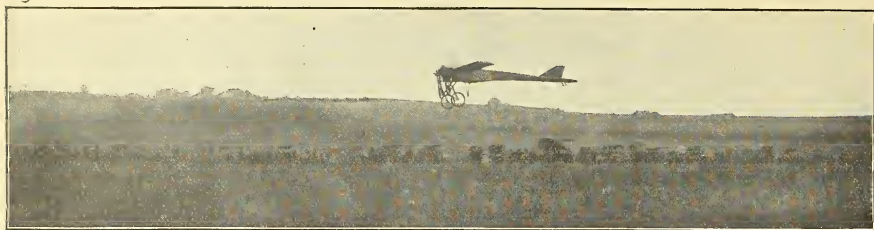
Hamel made a couple of circuits with it, and the thing showed an increased speed, getting close to Weymann's lap times on the 100 h.p. Nieuport earlier in the morning. He told me when he came down that the warp was difficult, and I noticed when he was turning the single western pylon that, though he was taking the corner fairly wide, yet the inner wing had got all the warp it was possible to get on it.

While we were getting Hamel's machine ready to start and waiting for a rain squall to blow over, Gilmour suddenly turned out on the big Bristol biplane which England had flown over, and proceeded to do quaint things in the air with it. It was really quite a clever performance considering that the wind was almost enough to bring him to a standstill at times, and threw him about like a cork on rough water.

Hamel made a perfect landing with the clipped-wing racer, for though the thing seemed to have no gliding angle, its speed gave it a fairly flat trajectory when the engine was shut



Morison, Valentine and DelaCombe inspecting Hamel's wreck. Note that the pilot's seat is not displaced.



Hamel making his first test flight on the truncated Blériot. Notice the long ranks of cars in the enclosure.

off. P. K. Turner, who plays with figures for amusement, calculated that the visiting-card wings must be carrying a load of something like 14 lbs. to the square foot, but personally I incline to the view that the machine is really a horizontal helicopter, and the wings are only there to prevent the machine from turning round the propeller.

After his descent Hamel tried the third machine with un-clipped wings, and it handled noticeably better than the other, only unfortunately it was a shade slower, so that settled poor Hamel's fate.

#### Hamel's Accident.

After these preliminaries, Hamel, who foolishly enough had had nothing to eat since early breakfast, made his official start just about 2 p.m. in a full 20-mile-an-hour wind. He made a small circuit, and then shot across the starting line going great guns. He reached the first pylon, took it very close with a sharp turn very heavily banked, slipped sideways, dived, made a frantic effort to pull the head of the machine up, but was too late, and hit the ground about a hundred yards from the pylon. Hamel was thrown out, and rolled over and over like a shot rabbit, only stopping some thirty yards beyond the machine. The machine travelled about forty yards from where it hit the ground first to where it crumpled up and threw Hamel out, and the evidence goes to show that he must have got it almost level before hitting the ground, so that it ran some way before the chassis collapsed. Delacombe, Valentine, Morison, and I went out to the pylon to examine the wreck as soon as Hamel had been carried off unconscious, and found the machine broken short off, as usual in monoplane smashes, in front of the driving seat, so that if Hamel had been using a spring belt he would not have been seriously hurt, for the machine did not turn over.

Hamel escaped with a very bad shaking, and the doctors, who examined him thoroughly twice during the day, certified that no bones were broken, and that they could not discover any signs of internal injuries, but one cannot roll along the ground at something like sixty miles an hour without feeling queer for some time after, and he will have to take a good rest before he does any more flying.

Later in the day Hamel said that when the machine dived he hauled the *cloche* back as far as it would go, but the machine absolutely refused to come up, so it can only be assumed that after diving to try and bring the machine level laterally, which he could not do in any other way owing to the insufficient warp, he overtook a gust travelling in the same direction as he was, and practically fell into the pocket caused by it. If he had been fifty feet higher up he might have got the machine level longitudinally also and have escaped a smash altogether.

#### Chevalier's Troubles.

A few minutes after Hamel was carried off, Chevalier started on the little Nieuport with a tin 30 h.p. two-cylinder engine, which makes a most impudent noise compared with the steady roar of the big multi-cylinder engines. This little monoplane is a real flying machine, and is a genuine advance on anything yet produced. It has plenty of wing-surface for its weight, and a healthy span from tip to tip, yet it gets along very nearly as fast as the more powerful machines, as is shown by the fact that his sixty kilometres (ten laps) took just on 38 minutes against Leblanc's average of 29½ minutes for the same distance. The way he took the corner by the western pylon was rather paralysing to watch at first, for, as he turned, the tail went up and he appeared to be diving round, rather than flying, and his banking was very steep.

After he had flown about five laps, we at the pylon noticed that the note of his engine had changed, and that there was a distinct knock somewhere about the machine. Consequently we were not surprised to see him come down when nearly at the end of his eleventh lap. The machine glided beautifully, but came down in a rough field, so that it waltzed round and round instead of running straight.

Late in the evening, when the crowd had gone, the machine was brought back with a British red ensign gracefully draped over the front, and one of us lifted the flag and discovered that the left cylinder head had blown clean off. Hard luck on Nieuport, whose engines have done so well in practice and on record-breaking jaunts. The only damage done to the machine itself was a broken wing tip, caused by its waltz in the rough field.



A study of Chevalier "cornering."



# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz. :

35 h.p.	* 60 h.p.	100 h.p.
---------	-----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

Mr. Sopwith's recent record flight over Philadelphia, U.S.A.,  
was made with a 60-h.p. E.N.V.

The E. N. V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESSEN, LONDON, N.W.

Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

# HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



Eight Types

## Monoplanes

From 40 to 80 miles per hour

## Biplanes

From 36 to 50 miles per hour.



Catalogue on Application.

Winner of De Forest Prize.

After some time another similar machine was brought out, and Chevalier started again, the rules allowing him to do so, the delay counting as flying time. However, his luck was against him, for when flying over his first machine so as to go on from the spot where he stopped, his motor stopped again and let him down in the same field. The delay of getting the machine out of the field and starting yet again would have been so great that he gave it up in disgust and became a mere spectator.

#### Weymann's Appearance.

Just before Chevalier came down, suddenly another Nieuport shot into the air opposite the sheds, and came tearing up the hill to the pylon at a pace which fairly made us gasp. It is one thing to stand by the sheds and see an aeroplane whizz by a hundred yards away, and quite another to stand by a pylon and see the thing coming right at you, heel viciously over as if it were a bird of prey about to pick you off the face of the earth, and then shriek past within a few yards of you at eighty miles an hour.

The new arrival was Weymann on the 100-h.p. Nieuport, with a 14-cylinder Gnôme, and it was easy to see there was nothing left to beat him. Round and round he tore, his machine travelling at more than 80 miles an hour air-speed, so when he went steering down the long straight to the first eastern pylon with a 20 mile an hour wind behind he must have been doing well over 100 miles an hour.

His average speed works out at close on 79 miles an hour, and owing to the sharp corner at the western pylon he was travelling considerably more than 6 kms. to the lap. As a matter of fact, the times would have been appreciably faster if, instead of being kite-shaped, the course had been elliptical, or if it had had semicircular ends to the two long straights, for then the course flown would have been closer to the distance measured straight from pylon to pylon.

Weymann's flight was quite uneventful, but everyone waited with a certain anxiety for his landing, for it scarcely seemed as if such a small machine with such an enormous engine could glide at all, or that after over an hour at such speed a man could judge his landing to a nicety. However, after the signal flag had been waved to tell him he had finished the course, Weymann took his machine up to about 150 ft., dived round behind the judges' tent, and then, when about 20 ft. from the ground, shut off his engine. The machine glided beautifully, and seemed to travel without dropping appreciably for several hundred yards, landing quietly without a jar on its single steel skid.

#### Ogilvie's Effort.

Ogilvie started next from the door of his shed, and flew round over the starting line. For twenty laps he flew faultlessly, rather higher up than the others, his N.E.C. two-stroke engine giving forth a most astounding noise, of great penetrating power. The noise was probably accentuated by the fact that he carries rather long exhaust pipes, which give a peculiar metallic ring to the sound. The wind had gone down somewhat when he started, so his machine was very steady all the time, except when Leblanc, who started while Ogilvie was flying, overtook him on the straight, passed inside and below him, rising directly afterwards and turning the pylon so that Ogilvie got his "wash." For this piece of business Leblanc ought to have been disqualified, but Ogilvie is not the man to win a prize through an objection, though he told me, when he came down, that he had to use his warping lever to its fullest to avoid being upset.

At the end of twenty laps Ogilvie alighted right opposite the judges' box, and when several of us ran out to see what was the matter we found his only trouble was a desire for more oil. This was soon forthcoming, and he finished his journey in good style, being loudly cheered when he landed neatly at the starting line.

At first it was given out that Leblanc was ill, and that Aubrun would take his place on the French team. Leblanc was said to be suffering from influenza, and some humorists suggested that it was the result of his having received a chill to the feet—a phrase of considerable meaning to aviators. However, when Hamel smashed up, someone had to put up a show for the Bleriot, and so Leblanc did it, but he waited till the wind had dropped away to almost nothing, and he did not cut his corners very close. Hamel's experience had evidently been a warning to him, and he played for safety. His laps were slower than Hamel's, whose trials showed him to be practically as fast as Weymann. Ultimately Leblanc ran into

second place, his 100-h.p. engine enabling him to beat Nieuport on his 70-h.p., though the difference between their lap times was very small.

Nieuport started only a few minutes after Leblanc, and flew magnificently. It was evident that he could not beat Weymann, but his fight for second place was followed with interest, for Nieuport is a sympathetic personality, and his evident effort to improve the design of aeroplanes has made him popular among men who really understand what advance in design means to the sport.

Nieuport's landing was the prettiest of the day, for he made a short circle after crossing the line, went up fairly high, and came down in a sharp *vol piqué*, followed by an astonishingly flat glide, so that one really could not tell when he first touched ground.

When Nieuport finished, and it was seen that Weymann had won, the little Haitian was brought out and decorated with the American flag, to be hailed as victor by the crowd. Mr. Cortland Field Bishop, the President of the Aero Club of America, an old friend of mine from the days of the first Reims meeting, told me it was the same flag that flew from Glenn Curtis's hangar when he won the cup at Reims in 1909, and that did duty at Belmont Park last year.

I had the temerity to question Mr. Weymann's American citizenship, but Mr. Bishop assured me that Weymann's father, though he has a strong French accent, is an American citizen, and so the son follows suit. I rather fear the victory of the little brown man will not be as popular in America as it deserves to be, for the real Yankee is rather more precise on the question of colour than we are on this side, and Weymann, despite his American citizenship, German name, and French origin, shows more than a trace of relationship to the negro republic in the Caribbean Sea of which Port-au-Prince is the capital. However, he is a fine flier, and undoubtedly the best man won, so good luck to him.

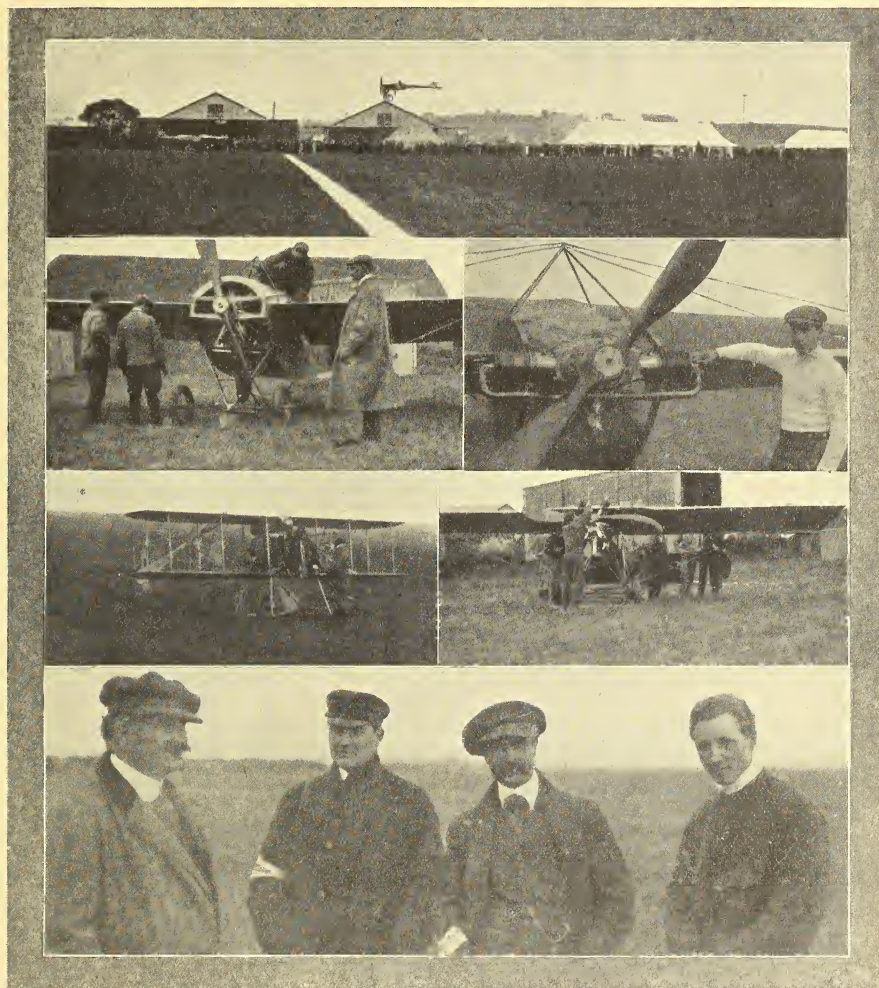
#### The Ceremony Afterwards.

When the racing was all over Gordon England brought out his Bristol, and, after a couple of turns round to see that she was running properly, and to let the crowd have a look at the lower side of his planes, he set off into the sunset on his way back to Rochester. Then something over a hundred of us adjourned to the official dinner, where everyone said nice things about everyone else. Mr. Bishop said how pleasant it was to get the cup back to America, though he hoped England would win it next year, so that America could win it back. He complimented Nieuport on his fine work. Nieuport replied in the halting manner of the man of action to Mr. Wallace's toast of his health, and paid compliments to Ogilvie and Hamel. Ogilvie, who is even a worse speaker than Nieuport [N.B.—This is a compliment to a man of action, words and deeds being generally in inverse ratio], said, when forced to respond to an enthusiastically received toast, that the credit belonged to the Moris and the Wrights. And Chevalier and Weymann, when called upon, said "*Merci bien*," and sat down. M. Schneider, of the French Automobile Club, the orator among our guests, made a beautifully clear-cut speech in real classic French, winding up dramatically with "*Vive Angleterre! Vive le Royal Aero Club! Vive Aviation!!!*" the exclamation marks being indicated in his voice as clearly as in print. After that we adjourned to a South-Eastern "special" non-stop direct express, which took 2½ hrs. to get to Victoria, just the same time as was taken by my friend Thompson's five-year-old Itala, which brought me down at a nice tough pace, including a stop for breakfast. The contrast between the speeds we had been watching and the speed we were enduring were somewhat marked.

#### Hors D'Oeuvres.

This looks Irish, but the following disjunct remarks merit that title, though they be at the end instead of the beginning. No third man started for England, and most of us are still wondering why; for Gilmour had damaged the new Martin-Handasyde the day before, and his Bristol monoplane was not ready in time. Still Valentine might apparently have had the Deperdussin which Aubrun had offered him, for it stood a chance of beating Nieuport, if not Leblanc, Gilmour or Morison or Radley or Greswell might, perhaps, have borrowed the third 100-h.p. Bleriot, but I do not think any of them were anxious for it, without knowing more about it.

Anyhow, England got her deserts, for we have plenty of fine fliers if only someone would go the right way to work to

**Scenes at the Gordon-Bennett Race.**

At top : Leblanc crossing the finishing line. Then:—Filling up the 70-h.p. Nieuport ; Chevalier beside his little Nieuport ; Ogilvie just landed on the Baby Wright, met by Harold Perrin ; Tuning up the Deperdussin with 6-cylinder Auzani engine. At bottom, left to right : The Brothers Seguin, makers of the Gnome engine, Louis Blériot, and Gustav Hamel.



provide machines for them. Where are all our monied sportsmen who find the money for English teams to go abroad for international athletic meetings, yacht races, polo matches, and so forth?

The catering at Eastchurch, especially including the attendance, caused considerable comment. I have seen worse, but I cannot at the moment recall where. I do not know who was responsible for it, but I hope they will not do it again. There were no signs of the Army and Navy Stores, originally advertised as caterers, so I acquit them of all blame.

M. Ratmanoff, the maker of the "Normale" propellers—Drzewicki's design—was immensely delighted when he found that Hamel's trial lapse with his propeller were faster than Leblanc's on a similar machine, and he was correspondingly downcast at Hamel's smash. However, Nieuport's fine flight was some consolation to him.

Mr. Pepys-Goodchild was, equally, much elated at Weymann's victory with a Chauvière propeller, especially as it had replaced another make and gave increased speed.

Another person feeling much pleased with himself was our friend of Wakefield's, for all the competitors were using Wakefield's "Castrol" brand lubricant.

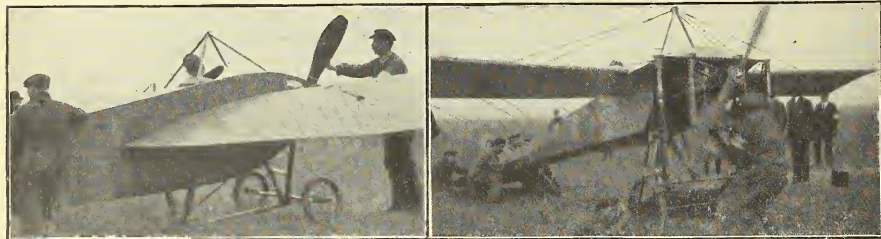
Mr. Howard-Wright—who, by the way, is busy on a machine for the "Circuit of Britain" with an E.N.V. engine—distinguished himself by a magnificent "bull" at dinner. Pointing out celebrities to a lady visitor, he said, "And that's the back of Weymann's head facing you now."

The naval aviators at Eastchurch were in great form all day, acting as officials and showing many visitors round the sheds before racing started. It must have been a pleasant change after their usual "hermetic" existence. I gathered that they, like the Army, are rather pleased at the idea of having a couple of Valkyries on which to experiment.

Mr. Horace Short, on the subject of "Racing Freaks," was worth listening to, and, as usual, he talked sound sense, for what he does not know about constructional work is not worth much. Between whiles he was good enough to take me into his office and do some sketches for me of a new big-powered military machine on which he is working. If I am any judge at all, he has got hold of an idea that is going to develop quite a new line of thought concerning automatic lateral stability, and he is not using any "gadgets" either in this new design.

The arrangements for spectators at Eastchurch were splendid, and everything went merrily from start to finish. Mr. Harold Perrin, the Secretary, and his hard-working Assistant-Secretary, Mr. Joseph, deserve every credit, and I am glad to have this opportunity of congratulating them. It was not their fault that the course was the wrong shape, was in the wrong place, and had a shocking surface except along the starting and finishing straight. Everything secretaries could do they did excellently well, and their best reward was the fine "gate" they drew. Over 3,000 people in the shilling enclosure, and practically as many (though chiefly members) in the five shilling enclosure, is not bad for a meeting in the wilderness, and the cars alone at ten shillings a time must have nearly paid for all the expenses.

I should like to see Perrin's organising ability turned on to getting up a really good flying race over, say, three laps of a circuit embracing Brooklands, Hendon, and Oxford; or Brooklands, Hendon, Huntingdon, and back three times. It would make a grand day's sport. Will any sportsmen put up £1,000 for prizes? Anyhow, congratulations to the Royal Aero Club on the success of the first race organised and run absolutely by the Club alone. It was the best "meeting" we have yet had.



Left:—The pilot's position on the Nieuport. Right:—Swinging Leblanc's propeller at the start.

#### Concerning Doings in France.

M. Maurice Ducrocq, the popular aviator who has flown so much at Brooklands, came back from France last week, where he had been practising on a Nieuport, and also "assisting" at the "European Circuit." On his arrival he gave THE AEROPLANE some interesting points about the new French machines. He says that the most noticeable thing about all the new racers is their extreme "whipiness." So whippy are they that if you take hold of one part of the machine and shake it, the machine springs all over. This applies not only to the wood-built machines, such as the Morane and Deperdussin, but also to steel machines, such as the R.E.P. and Train.

The idea in this is, of course, to make a somewhat elastic machine which will "give" when the machine hits a gust, and spring back afterwards, instead of remaining rigid till it breaks.

He describes the new racing Farman as being a small edition of the Voisin machine which was seen at the Paris Show. That is to say, the single-tail plane is mounted level with the upper main plane, and the elevator has been abolished altogether. One of the Farman pilots, Bill, who was formerly a tutor at the Etampes School, started on one of these in the "European Circuit," and on reaching Reims at a height of some 2,000 feet, he was starting to descend when one of the ailerons broke away, a thing which is by no means unlikely when one considers the way they are fixed on Farman machines. M. Ducrocq says that Bill's descent was

much like that of a piece of paper fluttering down from a window, as he made one terrific dive, then seemed to stand still in the air for a second, dived back again in the opposite direction, paused again, and then came down with another dive the other way, finally landing on one wing, and smashing pretty well everything about the machine except the engine, the propeller, and himself.

When one considers the manoeuvring necessary to get down minus an aileron, one realises that the effect viewed from below would be somewhat alarming. Supposing the right aileron to have come off, the only way to correct a tilt to the right would be to swing the machine round to the left with the rudder as hard as it would go, so as to increase the speed and consequently the lift of the right wing. Then, if it tilted too much to the left, it could be corrected by using the left aileron and steering slightly to the right, so that, in order to maintain lateral stability, the path taken would consist apparently of terrific dives, each followed by a sudden swerve to the left or a curve to the right, and one's directional steering would be more a matter of luck than anything else.

M. Ducrocq unfortunately damaged one of his ribs through landing rather roughly with his Nieuport, and so he is taking a rest for a couple of weeks. The reason for the damage was that he was using a rigid belt, which squeezed the rib in and cracked it. An elastic belt would obviously have given a spring out and would have prevented harm. However, we hope to see him flying in his usual fine style in another week or so.

# Air Currents.

## To a Pair of Skids.

Once you were skids, who now are but a few  
Odd scraps of wood with nails stuck here and there.

The graceful curve that was of old so fair  
Has vanished into dark oblivion too.

Still you hang on, although you chance looks blue

Of holding out for, let us say, a bare

Ten bumps along the ground—and in the air

A sudden gust might crack you through and through.

Because we wish, we use you; it were vain

To put in new ones, while one screw or nail

Or half an inch of spruce or ash remain.

And when the hour comes, and at last you fail,

We will collect the bits, and once again

You shall do service as a Farnham tail.

D. M. H.

## The Army Aeroplane.

Through the kindness of friends, THE AEROPLANE is able to give the accompanying sketches and description of the humorous new biplane turned out by the Army Aircraft Factory. Though dimensions and certain details are lacking, it may be taken that the general design is that of the "aircraft" at Farnborough.

As may be seen, there is a fuselage of the Blériot type, at the front end of which is a fixed stabilising plane set at a big, and therefore inefficient, angle in an endeavour to obtain a modicum of automatic stability.

On each end of this plane is a neat little flap, which, if moved when the machine is on the ground, gives it somewhat the effect of an elephant wagging its ears. These flaps are intended to act as elevators, and are arranged on the same system as those on the Blériot tail, only, unfortunately for prospective pilots, the Blériot tail carries less weight to the square foot than do the main planes, whereas in this machine the elevator must, if the machine is to fly, carry much more, in proportion, than the main planes. Consequently the elevator flaps are likely to assume a decided dihedral angle, unless the rod on which they work is made of "solid tubing."

Passing along the fuselage, we now come to the driver's seat, carefully situated in front of the petrol tank, behind which is the engine, so that in the event of a smash the petrol tank may burst with certainty on top of the aviator, impelled thereto by the hot and heavy engine.

Apparently to ensure this, the skid-struts are so situated that the fuselage will break accurately at the pilot's seat, and the rest of the machine will turn over on top of him.

From the fuselage we next proceed to the main planes, which, it will be seen, are hung out over the back of the skids. An entertaining point about these planes is the fact that the outer sections of each *cellule* (or box) has the lower plane tilted up at a sharp dihedral angle, so decreasing lift and increasing head-resistance. These tilted sections are warped in an endeavour to secure lateral stability.

In the middle of the planes we find a cleverly conceived scaffolding of steel tubing, which carries the propeller, this being driven by a chain, working from a sprocket fixed on a shaft extending from the front to the back of the lower plane. The combination of head resistance and general friction arrived at by this method would do credit to any village blacksmith's first attempt at aeroplane building.

The general effect is said to resemble what one might expect to be the result of hatching the fabled egg of the Voisin "Canard," if it were added in the process.

It may be noted that no rudder is shown, as the describers of the machine forgot to mention it. Possibly the apparatus has not got a rudder, for the Aircraft Factory (late Balloon Factory) has always made balloons, and so the art of steering

may be outside their ken. The manoeuvres with the late lamented Lebaudy "dirigible" would certainly lend colour to such a supposition.

## Dips into an Airman's Letter-Bag.

"Prince of Courage,—I have admired and worshipped you in secret since the day I first saw you fall sideways into the sewage farm. It was the noblest sight I have ever seen. The cigarette end that you threw away I regard as my most hallowed possession. I have put it carefully away in my seaweed album, and each night when the other girls are asleep I press a blistering tingling kiss upon it as I murmur your name. Oh! Dear Heart—"

"All true-blue airmen favour Bendall's 'Bullseye' Braces. They pull one together in moments of emergency. The ultra superline article. In two strengths, mild and full, rs. 1d. per pair (as advertised). Our motto: 'Excellence with economy, quality with value.' It will repay you to write for our beautifully illustrated descriptive booklet. Your competitors wear nothing else."

"Revered Sir,—May I humbly yet eagerly propose that at the conclusion of your next fine flight you should take the hat round in aid of the Swivel Tooth Purchase Fund for the Club-footed Shoplifters of Northern Nigeria, of which I have the honour to be Secretary. Gifts of vegetables—"

"... After the 19th bottle my friends were thunder-struck at my appearance . . ."

"... And I do implore you, dear boy, to please your old aunt by wearing those all-wool vestings, straight from the loom, which your Uncle and I purchased for you last December, however warm the weather may be. . . ."

"... Why, then, purchase an elastic belt at great expense to yourself when Bennett's 'Benediction' Bird-line will hold you firmly in your seat, fair weather or foul? You cannot fall out. Your clothes will come off first!"

"... You are therefore summoned to appear before His Worship the Mayor at 11 in the forenoon . . . and may the Lord have mercy on your soul."

"My Sinful Brother,—I cannot bring myself to believe that you sin wittingly. I implore you, poor erring sheep, to realise that you are wilfully flying in the face of Providence—"

"Gentleman with superfluous cash, of royal blood, educated Eton, Harrow, Cambridge, and Oxford, would not be unwilling to advance on note of hand alone . . ."

"Do you realise that we will bury YOU readily, aye! cheerfully, for the paltry sum of £2 8s. (less cash discount). Estimate includes brass fittings, best polished—"

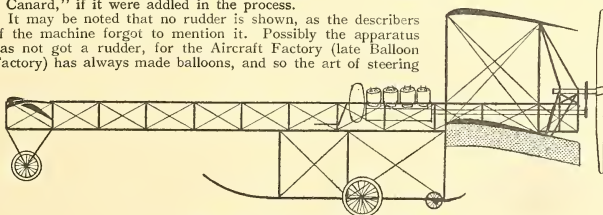
"... And I have to inform you, my dear Sir, that unless we are favoured by your cheque for the amount stated by the end of this week, we shall be most reluctantly compelled to place the matter in the hands . . ."

"Now be frank with us! Have you a bruise from a fall? Have you a cut from a wire? Have you a headache from engine vibration? Yes, of course you have! We knew it all along! Well, put down that crank-shaft and listen to us! We mean what we say! Just this: 'Slimy-Slogget's

Succulent Soldos, will not only imbue you with instant health, but also to confound your friends, but at the same time will disperse that tired feeling, nausea, flashes before the eyes, furred tongue, standard bread poisoning, stiffness after eating, dropsy, coronation bunions, airman's arm, hydrophobia, and nettelash. Cut this out and nail it on your hangar door: 'We give keen value because we do a large business. We do a large business because we give keen value.'"

"Now—" [Oh! Desist! !—  
Ed.] H. M. M.

A rough idea of the "Aircraft" Biplane.



## The European Circuit.

SOME MORE INSIDE INFORMATION ABOUT THE BIG RACE.

Eventually twelve men arrived at Brussels by the evening of the 27th, these being "Beaumont," Kimmerling, Védérines, Garros, Gibert, Duval, Renaux, Wijnnalen, Vidart, Barra, Prevost, and Train, in that order. Wijnnalen's smash the previous day was caused by a propeller bursting in the air, and seriously damaging one of his planes. Fortunately he was able to reach ground without wrecking himself, but the accident shows that a machine should not have the propeller situated so that it can do serious damage if it should burst.

Le Lasseur, who was officially reported as retired after leaving Liège, made a very plucky flight on the 26th. He was competing on his own account, without the support of the manufacturers; and after damaging his machine he bravely set to work to repair it. As soon as it was finished he flew on to Utrecht, landing there practically in the dark, as Valentine did at Brussels. He started again at dawn on the 27th, and damaged his machine again, landing at Breda, hurting himself somewhat in doing so.

### Brussels to Roubaix.

On the 28th the leaders started on the Brussels-Roubaix section, and arrived in the following order: Védérines (58 min.), Kimmerling (1 hr. 11 min. 40 sec.), Garros (1 hr. 15 min. 50 sec.), Beaumont (1 hr. 24 min. 25 sec.), Valentine (1 hr. 37 min. 37 sec.), Renaux (1 hr. 54 min. 27 sec.), Vidart (1 hr. 58 min. 16 sec.), Gibert (2 hr. 6 min.), Train (4 hr. 9 min. 50 sec.), and Prevost (4 hr. 43 min.).

Valentine, though out of the running for the big prizes, was still eligible for the intermediate stage prizes between Brussels and the finish. He received an immense ovation at Roubaix. Védérines took over a new Morane racer at Brussels, a machine with a 70-h.p. Gnome engine—one which has really been persuaded to work—and only a 26-ft. span. His increased speed over the others was at once noticeable, for he started fourth and finished first, being 17 min. faster than Garros's Blériot over a distance of only 100 kms. Garros might have done faster time, but he had left his map behind, and so followed Beaumont, "cutting figures of eight behind him," as he said, till he saw Védérines pass close to the ground below him, and then he followed him as fast as he could.

Vidart had to come down to see his way, and Gibert lost his goggles, and had to come down for new ones.

During the day news came in that Tabuteau and Hotchkiss had managed, by strenuous endeavours, to repair the Bristol, and that Tabuteau was coming on to join the rest in the morning.

Wijnnalen started, but came back again owing to some defect in his machine. This machine of his is one of the new racing Farmans minus a front elevator and with only a slightly lifting tail, the result being that the pilot sits about 4 ft. out in front of the main planes to balance the engine. Wijnnalen says that every now and then he looks back to see whether the machine is really there, he feels so isolated stuck out in front of everything.

Poor Duval, after his plucky flight, single handed and unsupported on the little Caudron, smashed up badly at Lawick, and was lagged as "retired." Barra did not start.

### The Gate-Money Trouble.

*Apropos* of the Utrecht-Brussels stage, one of the Britishers who followed the race tells *THE AEROPLANE* that the long delay in starting was really caused by the aerodrome people "arranging" with the aviators to start on and allow them to draw more gate-money. The *Commissaires*, seeing that the morning of the 26th was fit for flying, gave the starting signal, but the aviators refused to start, and stayed here for another thirty-four hours, much to the good of the "gate" on the 26th and morning of the 27th.

The strike, for to such it practically amounted, was broken by "Beaumont," who, after assenting at first to "hanging up" the Circuit, stole a march on the other competitors. In the afternoon he got his mechanics into his shed, tuned up his engine, adjusted everything nicely, put six men on to pull down the doors of the hangar, and flew straight out of his shed. The others were absolutely left standing, for they all had to start filling up tanks, making adjustments, and so forth, after he had left.

### Valentine's Flight From Roubaix.

Valentine had very hard luck again on the 29th. He started from Roubaix soon after 1 p.m., and after flying into and through a rain-storm, where he saw nothing for some minutes, he completely lost his way, and turned back to try and pick up his landmarks. Suddenly he smelt much burnt rubber, and realised that his magneto was burning out, as it had done at Mons. So he came down at once, to find himself only 10 kms. from Roubaix. He was driven back there by two French ladies, who were passing in a car, and got hold of a new machine. On this he started at 6.30 p.m., and after a very rough journey found himself driven to the north and close to Dunkerque. Following the coastline against a gale, which at times blew him to a standstill, he finally came down at about 8.30 p.m. near Gravelines.

On the morning of the 30th he crossed to England by boat, in order to be at Eastchurch on Saturday. and in the evening reported his troubles to *THE AEROPLANE*, confirming personally the accuracy of the reports published last week. With him in London was M. Aubrun, flying manager of the Deperdussin Co. So highly do the French think of Valentine's ability after his display in flying from Paris to Reims, Brussels, and Roubaix, that, in the presence of the writer and other members of the Royal Aero Club, M. Aubrun offered to lend Valentine his own Deperdussin racer for the Gordon-Bennett if he had not to use it himself, both Valentine and Aubrun being reserves for their respective countries.

### The Arrivals at Calais.

The actual arrivals at Calais were: 1, Védérines (1 hr. 16 min. 20 sec.); 2, Vidart (1 hr. 32 min. 8 sec.); 3, "Beaumont" (1 hr. 41 min. 39 sec.); 4, Gibert (1 hr. 45 min. 11 sec.); 5, Kimmerling (1 hr. 50 min. 57 sec.); 6, Garros (2 hr. 36 min. 2 sec.); 7, Renaux (7 hr. 7 min.).

It is worth while at this point to note the order of the competitors, taking their flying times over the whole course into consideration. They work out thus: 1, "Beaumont" (48 hr. 8 min. 41 sec.); 2, Garros (51 hr. 48 min. 55 sec.); 3, Vidart (64 hr. 21 min. 15 sec.); 4, Védérines (67 hr. 23 min. 33 sec.); 5, Gibert (71 hr. 32 min. 28 sec.); 6, Kimmerling (76 hr. 8 min. 12 sec.); Renaux (78 hr. 25 min. 28 sec.).

It must be remembered that out of these times should be taken about thirty-four hours' unnecessary stop at Utrecht, the rest being the time really spent *en route*, including smashes, landings to find the way, delays due to wind and weather, and everything else.

During the day Barra and Tabuteau got as far as Roubaix.

News also came in that Duval, as full of pluck as ever, had repaired, and was coming on from Le Crotoy.

At Calais there was something of trouble among the officials about letting the men start from Roubaix in a gale which was blowing at forty miles an hour there and sixty miles an hour near the coast; and Mr. Harry DeLaCombe, who was at Calais, told *THE AEROPLANE* that when they got near Calais even the racing monoplane were blown to a standstill time after time. Védérines on his arrival was particularly bitter at the officials who gave the word to start in such weather.

Gibert, on the R.E.P., was the only one who did not complain of being knocked about, and many had already noted the stability of the machine. Incidentally, Gibert is reported to be the only man who has got through so far on the same machine and with the same motor. Train, Duval, and Le Lasseur, though using the same machines and motors as those with which they started, had practically rebuilt them on the way, but Gibert had replaced nothing. The other leaders had new engines and new machines wholesale following them by special train, and ready when wanted.

Finally, on Thursday night it was decided to hang up the "Circuit" till Monday, partly to give the competitors a rest, and partly so as not to clash with the Gordon-Bennett Race on Saturday.

On the Friday a number of the competitors crossed to England and inspected the ground at Hendon, so as to identify the landing place. Some of them also went down to Eastchurch on the Saturday morning to see the Gordon-Bennett.



### The Laggards at Calais.

On the 29th Barra and Tabuteau both arrived at Roubaix, and on the 30th Wijnmalen and Douvet also appeared in the early morning. Train arrived at Calais.

On the 1st Tabuteau left Roubaix for Calais at 6.40 a.m., followed by Barra and Prévost. Wijnmalen also started, but smashed his machine half a kilometre afterwards. Train got to Calais, and the good Calaisians were so enthused by his plucky single-handed fight that they subscribed something like £400 for his expenses. Tabuteau and Barra both got to Calais, but Prévost came down *en route*.

On the 2nd—Sunday—Valentine, who had gone over to France on the Saturday night, went to Gravelines, where he had left his machine in a barn, and started for Calais, arriving safely. He told *THE AEROPLANE* on Monday that the farmer who owned the barn wanted four louis (about £4) for storage. Valentine's account of the flight in the gale from Roubaix is hair-raising. He took 25 minutes to cross the town of Dunkerque, and when fairly over the sea he let go his warp and elevator controls, and hung on to the edge of the dashboard to prevent himself from being pitched out, while the machine stood straight on end, first one way and then the other.

### Morison's Troubles.

O. C. Morison, who returned to England on Wednesday of last week, gave *THE AEROPLANE* some interesting particulars of his smash on the first day of the Circuit. He started well, and found the Morane very easy to handle, but, after covering about fifteen miles, an alarming noise started in his engine, and made him think that the whole engine was falling to pieces. At that time he was up at about 2,000 feet over the village of Gagny, situated in hilly country covered with woods, and at that height no landing ground was visible. However, Morison cut off his engine, thinking it better to "pancake" on the tree tops than to have the machine fall to pieces in the air, so he came down in a spiral *vol plané*, which he describes as being the best he ever did in his life, though, as he regretfully remarked, there was no one to appreciate it.

As he got near the ground he found that round the village were a number of handsome villas, each of which had at the back of it a large garden with a paddock attached, so he made for one of these. But, being strange to the machine, and not knowing how far she would run after landing, or how far she would glide when flattened out to land, he made up his mind that the only thing to do was to dive straight into the ground to avoid hitting the trees at the other side of the paddock. Consequently he rammed the nose of the machine straight into the grass, hung on to the frame himself, and simply let the machine smash.

On examination of the engine afterwards, he found that one of the valve rods had cast loose, through a pin which holds it in place coming out. This pin could only have got out through the deliberate detachment of the spring washer which holds it. Consequently, either a careless workman left the washer off when putting the engine together, or the washer was deliberately removed with the idea of bringing him down—the latter explanation being quite as likely as any other, as anyone knows who has been up against the manoeuvres of big racing teams abroad, either aeroplaning or motor racing.

The greatest pity is that both Valentine and Morison should have wasted good British money trying to fly foreign machines when they might have had British machines and taken a British crew to look after them. Both are fine fliers, full of pluck and ready resource, and, given fair play and reasonable luck, would have put up a very fine show.

### At Dover.

The first man to land at Dover was Védérine, but, much to everyone's joy, Gibert, on the R.E.P., beat him on time by 14 seconds, and so takes the Dover 100-guinea cup. Védérine has made himself very unpopular among those following the "Circuit" by his disgusting behaviour and foul language. As Loraine's mechanic he was a very decent little chap, but success has turned his head. One of the best French fliers commented on this to the writer, who excused Védérine by saying that he was only a *mécéno*, and knew no better. Said the Frenchman: "*Mécano! Mais, c'est un Apache!*" That is what his fellow countrymen think of Védérine.

In view of the possibilities of foreign invasion, it may be

well to tabulate the times of the different fliers from Calais, over a goodly slice of England, to London:—

Left. DOVER. SHOREHAM. HENDON. AVIATOR CALAIS. Arrived Departed. Arrived. Departed. Arrivals.

	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.
Védérine	4	0	0	4	38	7
Vidart	4	3	0	4	45	6
Beaumont	4	6	0	4	59	0
Kimmerling	4	9	0	4	52	0

	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.
Renaux	4	18	0	5	20	1
Garros	4	18	30	5	4	58
Tabuteau	4	21	0	5	12	20
Barra	4	29	0	5	30	0
Valentine	4	30	0	5	13	0
Train	4	32	0	5	14	57

It is said that the German papers are particularly interested in the arrival of so many foreign aeroplanes over the British fortress of Dover.

This warlike view seems to have taken hold of the British Press also, for several references to "invasions" have appeared. Others treat the whole thing as purely an exhibition of daring work by exceptional men. Very few seem to regard the big race simply as a real sporting event, similar, if immensely superior, to a big horse race.

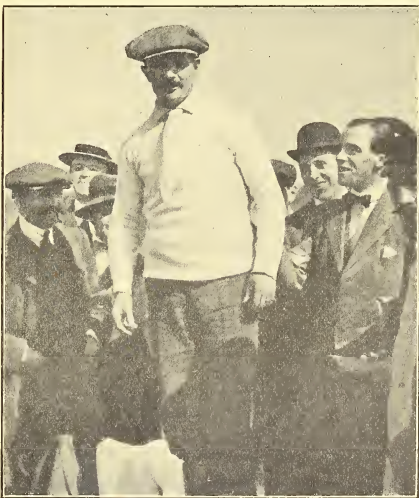
During the day two Short Farman-type biplanes paid an unexpected visit to the Dover Aerodrome. They were driven over from Eastchurch by Lieut. Gerrard, R.M.L.I., and Lieut. Samson, R.N. They made excellent descents, and after a wait of half an hour returned to Eastchurch.

### The Arrival at Hendon.

THE AEROPLANE representative had walked over to the Deperdussin sheds to have a look at the new machine being assembled, when there was the usual cry of "coming along." After a frantic effort to run half a mile while Védérine's machine glided down from 500 feet, he gave it up in despair.

Védérine crossed the line low, and landed faultlessly in front of the enclosure at 8h. 24m. 53s. He had just been welcomed when another machine hove in sight, very high, and about four miles away.

Everyone was watching, trying to pick it up without glasses, when, quite near, and only about 200 feet up, appeared Vidart's Deperdussin. He landed over by the new hangars, crossing the line at 9h. 0m. 46s. By this time the other machine was nearer, and was seen to be the Sommer. Kimmerling made a beautiful glide from about 2,000 feet, crossed the line at 9h. 4m. 15s., and circled the ground at about 50 feet, landing in front of the enclosure.



Védérine, the first arrival, surrounded by admirers.

This was followed by a half-hour's interval, after which the last manoeuvre was repeated. This time it was Garros, flying at about 4,000 feet, with all eyes on him, when suddenly Valentine appeared, at about 500 feet. He crossed the line at 9h. 33m. 44s., Garros being only 41s. later (9h. 34m. 25s.).

After this things seemed to hang fire a bit, so Paterson, at 10h. 15m., took up the "Baby." At 1h. 15m. news came that Tabuteau had left Shoreham.

At 11h. 2m. it was reported that Renaux had been seen over Watford a quarter of an hour before, and at 11h. 6m. a biplane was seen returning. It came over at about 1,000 feet, when its approach showed that it was Tabuteau. He landed at the new hangars at 1h. 12m. 48s. Afterwards Paterson, Grahame-White, and Greswell entertained the crowd on the "Baby" biplane.

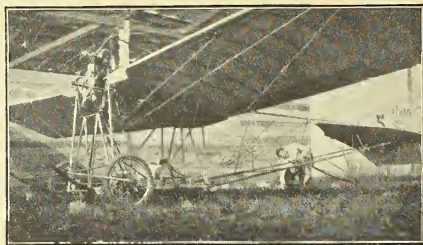
At 4h. 7m. definite news came that Renaux had arrived at Shoreham. Shortly after a two-guinea passenger arrived, and Hubert took him round. Next Hubert took up a lady, and Paterson brought out the big military biplane and took two passengers for a circuit, the motor not pulling extra well. In fact, the "Baby" seemed to be the only machine whose engine was really working hard. Paterson took up a lady, the "military" lifting her comfortably.

Gilbert arrived, flying high at 5h. 52m. 43s., made a circuit, finishing with a fine *roté plané*. Time from Dover, 1h. 53m. 43s., having been hung up at Dorking owing to a motor stoppage and a propeller broken in landing.

Eventually Barra arrived at Hendon at 7.40 p.m., after being brought down by the wind at Eastbourne, where Renaux was also forced to descend by the wind. All the fliers complained of the buffeting they got along the coast by Eastbourne and Hastings. Train was fetched down at Newhaven, and broke his tail, so that he was unable to complete the "Circuit." He had no spare parts for it; and the failure, after struggling so gamely for so long, affected him very deeply, so that, even at the Savoy lunch, he could not raise a smile at the Englishmen's attempt to talk French. Duval, the plucky Caudron flier, got to Dover on Tuesday morning, and he and Train are really the heroes of the "Circuit." Renaux at last reached Hendon at 8.33 p.m.

#### The Official Receptions.

On Monday afternoon a reception was held at the Royal Automobile Club by Mr. Holt Thomas, at which all the competitors who had arrived at Hendon were present, as well as the officials; and on Tuesday a lunch was given by the *Standard* at the Savoy. Mr. Roger Wallace proposed the toast of "The European Circuit," and remarked on the unwillingness of the better-class people in this country to assist aviation. He congratulated the *Standard* and *Le Petit Bleu* of Brussels on their work; also Mr. Holt Thomas and Mr. Georges Prade, the *Commissaires*. Prade replied in his usual fluent style. Mr. Davison Dalziel, M.P., proposing "The Aviators," congratulated them on their devotion to a fixed enterprise, and said the credit belonged to France. M. "Beaumont," replying, paid a tribute to our cross-Channel fliers, Rolls and Grace. Lord Northcliff said that newspapers could have done nothing for



View of arrangements of the Train Monoplane.

aviation without the initiative and courage of the French in the last ten years. France had in that time shown signs of a vitality which would astonish the world. We owed much of our progress to the deaths of the early martyrs of the automobile and aeroplane. Only those who had travelled by aeroplane, as he had, realised the intense discomfort of it, and the nerve needed to pilot an aeroplane. [It is open to question whether an aeroplane is more uncomfortable than the back of a horse, and to one who is not accustomed to either the aeroplane would probably be more comfortable.—Ed.] He was proud one of our old British journals, the *Standard*, should have promoted this race. The Count de Castiglione replied for France.

After the lunch the aviators adjourned to Hendon, where demonstration flights were to take place.

During the morning the aviators combined in demanding to be started not later than 6 a.m., instead of waiting till the advertised hour of 11 a.m., as they refused to fly over the dangerous country to Shoreham during the worst hours of the day.

In the interests of the Hendon Aerodrome "gate" every effort was made to induce them to delay the start, but eventually the aviators had their way, and so a good many thousands of spectators will have been disappointed of a fine sight. Still, as Lord Northcliff put it, the fault is the laziness of the British in not getting up earlier, and not that of the French in being too early.

#### What other Nations are Doing.

Readers of THE AEROPLANE are reminded that the Aerial League has on offer a prize of £5 5s., presented by Mr. H. Massac Buist, for the best essay, not exceeding 5,000 words, written by a member of the Aerial League, concerning the respective states of efficiency of the aerial fleets and aeronautical establishments of the leading countries at the beginning of each year, and intending competitors will do well to begin making notes of information they can acquire on this subject. THE AEROPLANE hopes to be useful in this direction.



At Hendon:—On Left,—Vidart arrives, accompanied by Grahame-White. Right,—Kimmerling greets a friend.



## The Week's Work.

## Monday, June 26th.

BROOKLANDS.—Fisher out on Hanriot for a few minutes in the afternoon during a lull. Found a very bad wind at about 500 ft., and as it got worse soon came down.

## Tuesday, June 27th.

BROOKLANDS.—Bell, on Hanriot, made two excellent flights in the evening, and Fisher was also out. Pixton, on Bristol, flew out over Weybridge. Johnson and Abbott both flew circuits on Blondeau-Farman, and Hilliard was up for some minutes. Other pupils flights on same machine.

HENDON.—Greswell brought out the old "Boston Light" Blériot, to oblige some friends, in a strong wind. Landed with wind behind and slightly sideways. Chassis caved in. Machine hesitated for nearly a minute, then turned over and extinguished Greswell, who eventually crawled out from underneath the fuselage. Quite unhurt, owing to tucking himself up small and holding on tight as machine turned over. Nothing much doing at Hendon all rest of week, except preparations for "European Circuit."

## Wednesday, June 28th.

BROOKLANDS.—Early morning Bell flew for brevet on Hanriot, making an excellent exhibition. Observed by Blondeau and Johnson. Johnson, Hilliard, Abbott, and Hetherington all doing circuits and figures of eight on Blondeau-Farman. Well-known pilot sold school machine. Indignation meeting of pupils. Told they will have to wait a week or so, when another machine will be ready. One pupil demanded money back. Dispute led to physical violence. A great pity, as those involved are both popular among their fellows, and all hope for a healing of the breach.

## Thursday, June 29th.

BROOKLANDS.—No one able to go out. No flying. Much weather.

## Friday, June 30th.

BROOKLANDS.—Gordon England takes out Bristol biplane for short spin. Gilmour tries Martin-Handasyde with new Antoinette motor. Flies a couple of circuits, but damages chassis when turning on ground.

SALISBURY PLAIN.—Weather improved for a renewal of flying. Jullerot, Fleming, and Pizey made short flights. Wind too rough for Col. Smeaton and Mellers to fly alone, but pilots gave them a demonstration in wind-flying by taking them for passenger trips. Pizey and Fleming made 12-min. flight together round Stonehenge and Amesbury Station.

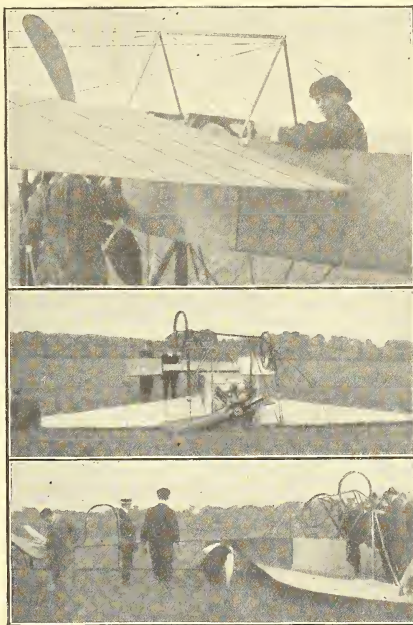
## Saturday, July 1st.

BROOKLANDS.—Afternoon. Pixton took passenger out towards Walton for a trip about 20 min. Fisher, on Hanriot, out 20 min. on Hanriot, landing with spiral *vol plane* from about 600 ft. Later, when wind steadied down a bit, the same two were out again, and Snowdon-Smith made a short cross-country trip on his Blondeau-Farman. Towards evening Raynham brought out the Avro-Curtiss and flew one or two circuits on it, but found it strange to control laterally. Gordon England started in morning for Sheppey to see Gordon-Bennett.

SALISBURY PLAIN.—After Pizey and Fleming had taken their departure, Colonel Smeaton made the first of his solo straight flights. The Colonel, who has been a very apt pupil, made five consecutive flights of about one mile each in excellent style. Later he surprised his tutors by flying straight to the Fargo Camp, gracefully circling around Stonehenge, flying back and landing with the utmost ease and precision.

## Sunday, July 2nd.

BROOKLANDS.—Early morning. Blondeau-Hewlett school at work. Abbott, Hilliard, Brown, Johnson, and Hetherington circuits. Wind very bad all morning and afternoon; in evening Snowdon-Smith doing fancy flights on the racing Hewlett-Blondeau. Watkin's E.N.V. engine pulling very well, took one passenger for a short flight, and started with another, but came down after flying down the course, as a wind and rain storm got up.



Above, Greswell about to start. Below, front and side views of the "discontinuation."

## Work at Beccles.

Miss Dorothy Howard writes: "The beginning of the week might be described by: first it rained and then it blew, and then it rained and then it blew again."

"On Thursday evening things began to look better, and the machine was brought out; Lieut. Parke took the helm and started off immediately in spite of a fairly stiff breeze. He rose easily in something under a hundred yards, and, after circling round the flying ground at a height of about 80 or too feet, headed off in the direction of Lowestoft. It was just at the time when the Yarmouth and Lowestoft trains were approaching Beccles, and there was an exciting race for a while between the Lowestoft train and the aeroplane, in which the latter had no difficulty in doing best time, and flew easily and steadily."

"On nearing the flying ground again, Lieut. Parke steered off to the left of the line preparatory to making a descent. The aeroplane had no doubt by this time become a little *entêtée*, and, possibly with the idea of showing off, proceeded to try and roct up two trees and a sign-post (successfully in the latter instance)."

"The damage to the landscape was considerably greater than that done to the machine, which was only suffering from a broken wing tip! (Perhaps one of the openings for aeroplanes in the future will be for 'landscape gardening'!)"

"So the machine, in a chastened mood, processed back to the shed, the distance covered in flight being something over two miles."

"Some alterations are being made in the chain gear, so the machine will not be out again for a day or two."



### The Willows Dirigible at Work.

Mr. E. T. Willows has recently been very busy at Birmingham with his little dirigible "City of Cardiff." A few days ago he took Captain E. M. Maitland, of the Essex Regiment, with him as observer for a trip over the district, and on another occasion he drove over from Wolverhampton to pay a visit to a friend at Handsworth, close to Birmingham, anchoring his machine in a field at the back of the house, and returning by way of the air later in the day. It will be remembered that Mr. Willows' dirigible is fitted with twin propellers, the shafts of which can be revolved so that they either pull the machine up or down as required, thus avoiding wastage of ballast and gas.

### Scottish Flying.

There have been busy days at the aerodrome of the Scottish Aviation Company at Barrhead lately. On Saturday last short flights were made in the afternoon, and at 6.45 in the evening Mr. W. Weir, one of the company's pilots, went up in the *Bériot-Gnome*. After about five miles he descended *en vol plane*. Mr. Weir then announced his intention of flying to Lanark. He steered via Darnley Ranges, continuing his flight over Rouken Glen at an altitude of about 1,500 ft.

At 8.30 a telegram was received at the Barrhead Aerodrome stating that the aviator had landed at Carmunnock, and that the machine had met with an accident. On receipt of this news Norman and Clinkskill and M. Salmét, who recently won his brevet at Hendon, left by car for the scene of the accident.

On arriving they found the aeroplane lying in a ploughed field badly damaged, but the aviator was uninjured. Judging from the position of the aeroplane, the under-carriage of which was smashed and the propeller broken, it would seem that, desiring to avoid alighting on the ploughed ground, Mr. Weir had attempted to glide into an adjoining field, but failed to clear a bank. [Moral.—Use big skids.—Ed.]

The flight was successful in another way, the speed attained during his course being seventy-five miles per hour. Twelve minutes elapsed from the time he started to the moment of landing, and the distance covered was between sixteen and eighteen miles.

### Work at Lanark.

Mr. H. O. Walsh, head mechanic at the Ewen School, writes:—"Very little flying has been done at this school during the past week, owing to high winds and rain, the wind seldom blowing less than 20 miles an hour, even in the evenings. Only on the Thursday evening did the wind moderate sufficiently to allow Mr. Ewen to take the school *Bériot* out.

"Mr. Ewen was booked to give exhibition flights on Saturday, July 1st, at Haddington, and on the previous day the machine arrived and was assembled, and Mr. Ewen made a short flight on the Saturday morning. Although the wind was very gusty in the afternoon, the pilot decided to attempt a flight, and was soon quickly in the machine and flying along the exhibition ground. Ascending steadily, he then made for the River Tyne, and when half way over the river it was noticed he was in difficulties, for the machine seemed to take a direct lift of over to feet, immediately after being

tilted over to the right, when the pilot very smartly rectified by turning sharply to the left.

"On reaching the opposite bank, however, he found the wind so strong that he was forced to descend, but unfortunately another gust caught him on the left, which dashed the machine to the ground, when it turned turtle, pinning the pilot beneath it.

"The crowd immediately burst through the barriers and rushed to the river bank, but their fears were soon set at rest when they saw Mr. Ewen extricated from the machine, apparently not much hurt.

"Many willing hands were ready to help, and the machine was quickly dismantled and conveyed back to its hangar, the river being crossed by boat rafts."

### Two Aeroplane Logs.

THE AEROPLANE has been fortunate in securing two genuine aviators' logs kept by the tourists to Eastchurch last weekend.

The first, kept by Fleming and Pizey, runs thus:—

Saturday, July 1, about 3.45 a.m.—Left the Bristol sheds on the Plain. Pizey pilot. Fleming passenger. Very windy at back. Nasty rain and low clouds at Basingstoke.

4.15 (about).—Motor missing through rain on distributor. Landed three miles N.E. of Basingstoke. Farmer's women-folk gave us tea.

4.50.—Got away again; motor going well. Passed passenger train at Farnborough as if it was stationary. Very bad eddies on entering Brooklands track. Landed safely to find England, but found he had gone on to Eastchurch. Took up petrol and oil.

6.35.—Fleming, as pilot, left Brooklands, with Pizey as passenger, flying for Eastchurch by compass (Clift), making bee-line passing out of track over woods on St. George's Hills. Rain again making things unpleasant, and wind rising all the time. Forging ahead to the bad country near Rochester, where conditions became so bad that decided to land, which was done safely on top of hill at Long Bottom. Went Gordon-Bennett by car. England flew over and joined us near Rochester Saturday evening.

Sunday, July 2, 5.40 a.m.—Started, with Pizey pilot, Fleming passenger, for Brighton (Shoreham). Nasty weather round Rochester for first ten minutes, after good going all the way, with great deal side wind.

6.25 a.m.—Saw that England had landed at Uckfield, and came down from 1,200 ft. with intention of circling around him to see if he wanted any assistance. When at 200 ft. and over a wood engine failed to pick up, necessitating a *vol plane* to the only possible place approachable, which was a nasty hilly little field. Had misfortune to carry away portion of left bottom plane against high hedge and dented elevator. Decided carry out repairs ourselves on the spot; worked all night.

Monday, July 3, 5.50 a.m.—Got away from there in morning, reaching Shoreham at 6.25 a.m. Fleming pilot, Pizey passenger. Greeted competitors of European Circuit. Great enthusiasm at Uckfield, where tourists were treated awfully well. The Clift compass works wonderfully, and ought to be better known.

G. P. PIZEY.  
HENRY R. FLEMING.



The "City of Cardiff" at Handsworth, near Birmingham.

The second, kept by Gordon England, says:

Left Brooklands 4 o'clock a.m.; passed south of London; had to land at Dartford owing to stoppage in petrol pipe. Two hours at Dartford. Wind got up; had rough passage to Eastchurch. Blown down ten miles from Eastchurch by high wind. Motor overheating. Started off as soon as engine cooled. Landed Eastchurch 7.30 o'clock. Made flight without aid of map or compass.

In evening started out for Rochester, where Pizey and Fleming descended. Made flight again without map or compass; had no difficulty in finding the other Bristol. Landed and then gave exhibition flight. People nearly mad with joy.

Early next morning started out in company with Pizey and Fleming for Brighton. None of us had map, nor could we borrow one, so only had faint idea as to where Brighton lay. Strong wind, but very steady; "crabbed" all way to Uckfield, made bee-line for Brighton.

Descended at Uckfield owing to engine failing. Later flew over to own home, Oakwood, Hayward's Heath. Landed in Convent grounds owing to high wind; had very rough passage. Received hostile reception, so had machine bodily lifted over hedge by small army of men into own field.

In evening, about nine o'clock p.m., left Hayward's Heath and flew back to Uckfield to help others repair machine. Spent night there, left for Brighton at 5.30; good passage to Brighton. Brighton to Shoreham very rough; worst time ever had in machine. Saw all "Circuit" men arrive.

Uckfield is a most enjoyable place for aviators. People most kind and very keen; gave us very fine reception.

E. C. GORDON ENGLAND.

#### Air Battalion Notes.

During the past fortnight little work has been done on the Plain owing to the weather, which has been generally windy or wet, or both.

The War Office has been conducting experiments on the adjacent artillery range with an aeroplane gun, which Colonel Depout, a French officer, has brought over to show. The shooting of the new gun was tested against targets on the ground, not against balloons or kites; so the results can hardly be conclusive.

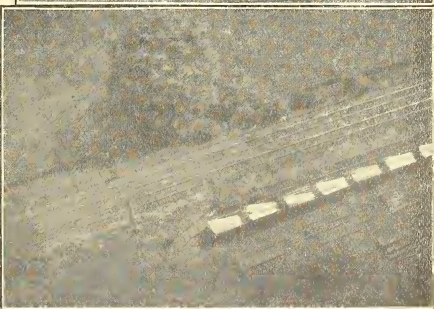
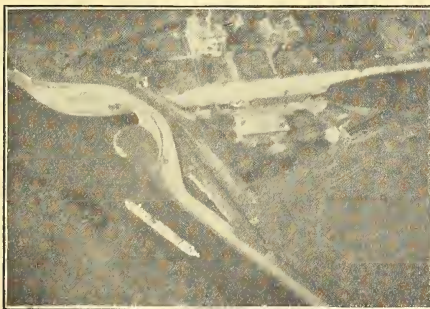
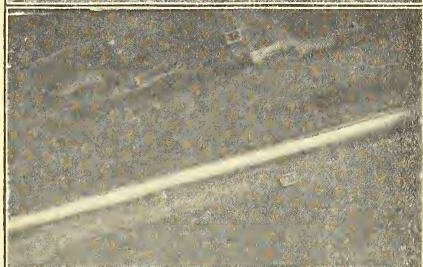
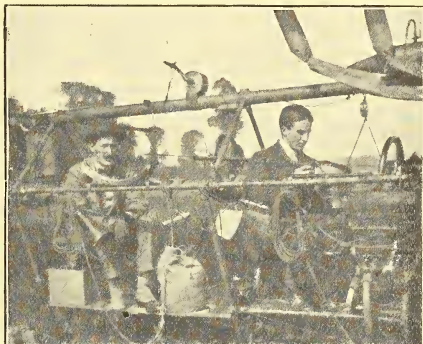
On Tuesday, the 20th, Lieut. Cammell was out on his Blériot with Captain Cardan, of the Air Battalion, who had come down from Farnborough to make various experiments with the machines here. Lieut. Conner had the Howard-Wright out of its shed, but found the engine running badly.

On the Wednesday morning some of the enthusiasts, who had waited in vain at Stonehenge all night to see the sun rise on the longest day, came up to the sheds after their vigil, and were rewarded by seeing Lieut. Cammell up for twenty minutes in a very gusty wind, which increased in force as he ascended.

The old Howard-Wright was out again on Friday morning, running along the ground in an apparently aimless fashion, which Lieut. Conner explained was because the engine went

on running after he had cut off the spark, and only stopped after he had turned off the petrol. Lieut. Cammell and Captain Cardan were for some time endeavouring to ascertain the speed of the Blériot. Lieut. Conner was out later in a Bristol, but came down near Fargo Plantation, believing something to be the matter with his engine. He flew back again half an hour afterwards. In the evening Lieut. Cammell had his machine out, but some engine trouble prevented him flying. Lieut. Conner was out on the Bristol for a couple of flights.

On Monday evening, the 26th, Lieut. Conner took out the Bristol, but, finding the wind rather puffy, returned. He and Captain Burke then observed for Lieut. Pepper, a pupil of the Bristols, while he flew for his certificate. The Commandant



Above 1—Captain E. M. Maitland and Mr. Willows about to start. Below 1—Three views taken by Captain Maitland. Note the shadow of the balloon on the canal; the row of trucks laden with planks; and the canal-boat, lock, and bridge.



of the Air Battalion, Major Bannerman, arrived on Wednesday and inspected the Bristol machines, including that fitted with a Renault engine, which is destined for the Air Battalion.

Lieut. Cammell has been away during the week at Eastchurch, where he went to fly the Dunne monoplane.

#### Mr. Barber at Shoreham.

A special wire from THE AEROPLANE correspondent at Shoreham runs: "Hardly expected racing Gnome-Valkyrie to be much of a passenger carrier, but this morning carried several passengers at heights from one to two thousand feet; in one instance useful load 28 stone."

Considering that this machine has racing wings, flat and of small area, this is a very good performance. The machine makes 62 miles per hour with pilot only, and for such a machine to lift a heavy load to a great height is distinctly unusual. This is similar to one of the machines presented to the Government, and, judging from its capacity, it ought to be earmarked as the particular mount of Captain Burke.

#### Ferguson's Bad Luck.

Mr. Harry Ferguson, who was the first man to fly in Ireland, and who remains Ireland's only aviator, has been hard at work all through the early part of the year rebuilding his monoplane, which was smashed at Magilligan last year. He succeeded in doing so very successfully, and made some good flights at Newtownards a week or so ago, but when carrying a passenger he came down and wrecked the machine fairly completely. He hopes to be able to rebuild it before long, but is obliged to go to work slowly, as he is depending entirely on his own resources and has no outside financial backing.

#### Notes on the Gordon-Bennett Machines.

The machines flown on Saturday at Eastchurch afford much food for thought, in the contrast between a machine carefully and expressly designed for speed, a slow machine modified so as to travel faster, and a naturally fast machine ruthlessly cut about to attain great speed at whatever cost.

The Nieuport machine carries, of course, the greatest interest. Everyone in this country has been admiring from afar its wonderful performances in France. The general attitude is one of admiration, and on examining the machine one is constrained to admit that it is justified. The inventor, in designing his high-speed 100-h.p. machine, has been immensely careful to retain to a great degree the safety which some constructors seem disposed to sacrifice. He has adopted a sensible wing surface, running it at a very small angle, thus gaining in efficiency—as proved by his superior speed with equal horsepower—and at the same time giving the pilot some chance to overcome the huge reaction torque of a powerful motor. A further advantage is that the reasonable surface enables the

pilot to rise to a height, should he so desire; for it makes it possible for the machine to glide if the engine stops.

In construction the machine is equally excellent. To avoid as far as possible the undoubtedly high resistance of tie-wires, the wing-spars are stayed from one point only. This, of course, throws great responsibility upon the tie-wires; and it is pleasing to see that the inventor has avoided the use of highly tempered piano wire, with its tendency to fatigue, and has substituted stranded cable, using a cable of about  $\frac{1}{8}$  in. circumference—i.e., 3-16 in. in diameter.

The chassis is delightfully simple, looks terribly weak, but is really pretty strong, as it is built entirely of steel. There are, however, some slight modifications which would, in the writer's opinion, be advantageous, especially if the machine is to be used habitually on ground with such a horrible surface as that at Eastchurch.

Mr. Alex. Ogilvie, in the short speech which he made—under protest—at the dinner after the race, ascribed any credit for his performance to the designers of his machine and engine. This was, to some extent, certainly fair. Mr. Mort, of the New Engine Co., is to be congratulated on having achieved a British-built engine which will "stay the distance," which is as light for its power as the foreign air-cooled engines, and has the advantage that it need not be eviscerated after every few hours' running.

The Wright Brothers deserve credit for turning out a nice little handy touring machine of medium pace, though why it was entered in a race against machines designed for real speed is a mystery—unless, perhaps, it was that Mr. Ogilvie, finding the R.Ae.C. too busy scolding pilots for town flying to bother about the defence of the Cup, offered himself, so that, at any rate, Britain should have a starter, however small the chance of his winning. Such an action would be like Mr. Ogilvie, who is a true sportsman.

In view of a recent article in THE AEROPLANE, it was pleasant to the writer to see that Mr. Ogilvie carried on his machine an "Air Speedometer" of a very simple type. We hope to publish a description of this in an early issue.

Of the Blériot machines the less said the better. If they were described somebody might build others like them. Suffice it to say that at the last moment 3 ft. were hacked off the wings in an effort still further to increase their speed! This reduced the wing surface to  $64\frac{1}{2}$  square feet, with a 100-horse engine trying to turn the machine over all the time. There was hardly any warp, and no dihedral. It is hardly surprising that even so clever a flier as Gustav Hamel should lose control (miraculously escaping almost scatheless from a most appalling smash), and that Leblanc, experienced as he is with high-speed machines, should have refused to start till the ten-mile wind had dropped to zero.

#### Changed Ideas.

P. K. T.

James Radley and Robert Lorraine, who both intended to fly Antoinettes in the "Circuit of Britain," have now given up this idea. Lorraine will probably be flying a Nieuport.



Ferguson's monoplane at Newtownards before its smash.



## ACCESSORIES



are a feature of our business. Everything required for Aeroplane Construction is in stock ready for immediate delivery. "AVRO" parts are designed upon practical lines by practical flying men.

**BUY YOUR PARTS FROM PRACTICAL MEN AND ENSURE DEPENDABILITY.**

Telegraphic Price List Post Free.

Every day sees more successful flights made on the "Avro" Biplane. Britain's most successful Aeroplane.

**A. V. ROE & Co.,**

THE AVIATORS' STOREHOUSE,  
Brownsfield Mills, **MANCHESTER.**

Telegrams: TRIPLANE. Telephone: 698 CENTRAL.

## THE NEW TYPE B VALKYRIE MONOPLANE

HAS NOW BEEN TESTED AND HAS  
PROVED AN UNQUALIFIED SUCCESS

**Especially designed for Military Service.**

THREE TYPES: 40-80 miles an hour.  
From £280.

ALL THREE TYPES FLYING DAILY AT HENDON.  
*Tuition Free to Purchasers. Particulars on request.*

**THE AERONAUTICAL SYNDICATE**

Established March, 1903, LTD.,

At the Flying Ground, Collindale Avenue,  
West Hendon, N.W. (6 miles from the West End)

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## THE Beney Propeller.

SIZES FOR STANDARD  
MACHINES KEPT IN STOCK.

*Particulars and Prices from—*

**ROBERT BENEY & CO.,**

7, CARLISLE STREET, W.

## CLIFT AERO MAPS.

For *Daily Mail* Circuit,  
AND ALL CROSS-COUNTRY FLIGHTS.

CLIFT MAPS were used by VIDART,  
KIMMERLING, VALENTINE and others  
in the EUROPEAN CIRCUIT.

For full particulars, prices, etc., apply  
**E. CLIFT, c/o The Aeroplane.**

## Nieuport Monoplanes.

**GORDON - BENNETT  
CUP, 1911.**

**1st.** Weymann on a Nieuport.  
**3rd.** Nieuport on a Nieuport.

GENERAL AGENT FOR THE BRITISH EMPIRE:

**MAURICE DUCROCQ,**  
Brooklands Aerodrome,  
Weybridge, Surrey.

## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

## A Suggestion.

SIR,—When looking through some back numbers of another paper, I noticed a suggestion by Mr. Cockburn for a cross-country circuit in this part of England (Marlborough).

The country round here is most suitable and near the flying centre on Salisbury Plain. I have mapped out the following circuit as being especially suitable; it is a hundred miles round (about), and I think there are landing places all the way (not lawns, for lawns do not produce a strong wheel base). The circuit includes Bath, Frome, Mere, Amesbury, Ludgershall, Hungerford, Marlborough, Colne, Bradford, and Bath.

My idea is that the competitors should each carry a passenger, and that each competitor should go round the course six times, only once in a day, on any six days in a certain period (the days being not necessarily consecutive). A prize would be given for the best aggregate time. This, I think, would produce a fast passenger-carrying machine, and also if the rule was made that the same machine should be used throughout, it would tend to produce a strong machine, not a mere racing freak, in fact a machine suitable for the Army.

Marlborough.

"SUBJECT."

## These Freak Racers.

SIR,—As regards "Editorial Opinion" in the issue of THE AEROPLANE dated June 26th, I think it is hardly fair to say that there is no attempt at lateral or longitudinal stability in the "freak racers" taking part, for instance, in the European Circuit, for if this were the case it would be quite impossible for any of the machines to have got as far as Calais, for they have encountered anything but fine flying weather all through the race.

However, I quite agree with your views on the weak landing chassis of the machines flying in the "Great Air Races." It seems that the chassis of the Nieuport is very strong and offers very little head resistance, but even this might be improved by such wheels as those on the all-British Short biplane.

By the by, as regards "Popular Ideas," I heard rather an amusing conversation between two people when Morison had his Blériot monoplane here. It was between an "aviation enthusiast" and an "ignorant fellow":—

I.F.: I saw Morison flying this morning.  
A.E.: Oh! What was he flying, his Blériot?

I.F.: I don't know; anyway, it was a biplane. I distinctly saw the two planes.

A.E.: Can't have been.

I.F.: I saw them perfectly well, one on each side of the body.

Lancing. W. A. C. MORGAN.

[Mr. Morgan forgets that these fast machines have practically no automatic stability and depend almost entirely on the pilot's skill to keep them in the air. We need something better than this.—Ed.]

## "Aero-Mania."

SIR,—With reference to the letter *re* "Aero Mania" in "Air Currents," I heartily agree to a certain extent with the writer, and am pleased to say, modestly, that I have "got it strong." It is really the "mania" that spurs one on to fly—a longing to get into the air and perform the feats of the birds. It is peculiar to every sport, the mania of tobogganing, of skating, of footballing, cricket, etc., and those who possess the mania strongest are those who put their whole heart into the thing and eventually reach the top in the respective sports. But the word "mania" is too strong! By the expression I mean real grit; the determination to succeed by pluck and perseverance, to accomplish anything attempted.

It is this spirit that Dr. Forbes Winslow calls "mania," and I can well understand anyone not infected with the sport

in question failing to grasp the real foundation that underlies this "aero-madness." When an aviator mounts his seat at the commencement of a race, does he do so with the object of killing himself or of winning the competition? His one hope, in my opinion, is to carry off the trophy, regardless probably of life and limb, wind, weather, and everything else. In fact, I believe most of our present-day pilots would sooner be killed in the pilot's seat than anywhere else.

This spirit, which is found in our sea captains, army captains, and so forth, would be termed by the esteemed doctor "aero-mania." But let him remember that it is the spirit peculiar to the true Englishman, the spirit that has made England what she is to-day, and the same spirit that will eventually place us at the top in aviation!

If I had the means I would like to show Dr. Forbes Winslow what his so-called "madness" can really do, and if the chance comes my way—but such thoughts only tempt me to go pilfering in some aviator's hangar at an hour when it would not be discretion to fly, and put my thoughts into practice.

I sometimes wonder if these aviators think of those of their fellow beings whose ambitions are the same, whose one hope is to fly, but, owing to a mistake at birth, have to be content with *reading* accounts of their flights—all the time only serving to increase this "aero-mania" more and more.

Silvertown.

E. A. SISSONS.

## The "Intrepid Airman."

SIR,—The enclosed veracious account, doubtless by an eyewitness, of a recent incident in the humdrum life of an aviator may be of interest to your readers—marines in particular. It is from *Everybody's Weekly*, dated July 1st. With innumerable others, I am enjoying your re-entry into the field of aviatric journalism.

Thus the story:—"Consider the Swiss airman, Taddeoli, at Lausanne. Twice at a height of 2,000 feet the aeroplane overturned, and Taddeoli, thrown on to the wings, skilfully climbed back to his driving seat. Even after that his trials were not over, for 250 feet from the ground the engines stopped, and the aeroplane dropped like a stone. Again Taddeoli's alert courage saved him. He simply hung from the machine with his hands till the earth was within a dozen yards or so, and then let go, rolled down a hillside pasture, and so escaped unhurt."

Brooklands.

J. M. McCREGOR.

## The Glasgow Stage of the "Circuit."

There seems to be some discontent concerning the choice of the old Paisley racecourse as the landing place for the *Daily Mail* "Circuit of Britain," and it rather looks as if the Scottish Aeronautical Society had not done as much searching as it might have done to find the best ground. There is already an aerodrome in full working order at Barrihead, so it seems rather a quaint idea to go right out to Paisley to find a ground, more especially as the Barrihead ground, being owned by an aviation firm, might in the nature of things have commanded the support of the Scottish Aeronautical Society, which was formed for the promotion of aeronautics in Scotland.

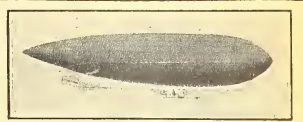
Strangely enough, when the Royal Aero Club representatives visited Glasgow they were not even taken to look at the Barrihead ground. Later, when a protest had been made, Major Crookshank, of the Royal Aero Club, was asked to visit the ground, but notice of his visit to Glasgow was only sent to Mr. W. G. Duncan, the chief of the Barrihead ground, a few minutes before Major Crookshank arrived. Consequently, when Mr. Duncan got out to the ground an hour later, Major Crookshank had already left. He reported that the ground was in every way suitable for a landing place, but would be difficult to locate. THE AEROPLANE is informed that, owing to not having anyone to point it out to him, he did not observe that quite close to the ground is a huge reservoir, which, though invisible from the surface of the ground, can be seen for many miles when once in the air. The whole case is somewhat extraordinary, and it seems a pity the enterprising people at Barrihead are not getting their deserts.

# E. T. WILLOWS · LTD.

## AERONAUTICAL ENGINEERS

### SPECIALITY: WILLOWS' DIRIGIBLES

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



**W**ANTED immediately, first-class Aviators to fly a machine for *Daily Mail* £10,000 prize. Give all past records, and state terms.—Box 321, c/o AEROPLANE, 166, Piccadilly.

**50** H.P. ALVASTON for sale, perfect condition, fresh from makers; replacing by more powerful type; price £95.—MALLOWS & CO., ADELPHI HOUSE, 71/72, STRAND, LONDON, W.C.

**A** RESPONSIBLE position is vacant in an old-established firm of Aeronautical Engineers with flying grounds, machines, and several valuable patents. Salary, £200 to £300 per annum, according to investment. Strictest investigations. Solicitor's or Banker's reference required.—Write MALLOWS & CO., ADELPHI HOUSE, STRAND, W.C.

**35** H.P. GREEN AERIAL MOTOR, latest make, new, identical with 24-hour non-stop engine, price £200. Fitted in Dirigible, or Aeroplane, £500 complete.—C. G. SPENCER & SONS, 56a, Highbury Grove, London, N.

**A**EROPLANE CLOTH. Spencer's Balloon Fabric. Best and Cheapest. Width 44 inches. Length 60 yards per piece. Price 1/- per yard Unproofed. 1/6 per yard Waterproofed. Delivery from Stock. Used on many well-known Machines.—C. G. SPENCER & SONS, 56a, Highbury Grove, London, N.

#### An Opportunity for Pilots.

THE AEROPLANE is in touch with a couple of manufacturers who each want a first-class pilot to fly their machines in the Circuit of Britain. If candidates will write the Editor of THE AEROPLANE, they can be put into touch with the manufacturers in question, or, if preferred, they are invited to call at 166, Piccadilly and discuss the question with the Editor.

#### More Opinions.

C. Howard Pixton, Esq. (Certificated Pilot).—"I think it is undoubtedly the best all-round paper dealing with aeronautics. On reading THE AEROPLANE I can always be sure of obtaining the very latest news and information, reported accurately and without prejudice. A feature I appreciate very much is 'Air Currents,' and hope to see two pages shortly. Congratulations!"

J. Dudley Sturrock, Esq. (from New York): "We both (Sopwith and I) wish you the best of luck."

W. LeMaitre, Esq., the Aeroplane Building and Flying Society:—"Congratulations on your paper, which is really touching the spot. Glad to see you appreciate the lighter side of aviation."

#### Coming Events.

#### AEROPLANE COMPETITIONS.

July 22.—Start of *Daily Mail* "Circuit of Britain."  
 Aug. 5.—Finish of "Circuit of Britain."  
 " 5-21.—Circuit of Belgium.  
 Sept. —.—Paris-Bordeaux-Paris.  
 Oct. —.—French Military Competition (1,200,000 fr.).  
 " 31.—Last day for British Michelin Cup Flights.  
 Dec. 8-25.—Paris Aero Show.

**L**ANARK AERODROME, Lanark, N.B.—Tuition by Certificated Aviator on genuine Blériot Monoplanes; Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

**A**EROPLANES, motors, castings, engines from 10 H.P., woodwork, coverings, castings, propellers (below); quotations many second-hand. Miniature aeroplane motors, part machined, 9/9; many sizes, cheap (below). Illustrated list, 4d.—LITTLEOVER WORKS, DERBY

**P**ROPELLERS.—"Avro" Propellers of proved efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines.—A. V. ROE & CO., BROWNSFIELD MILLS, MANCHESTER.

**M**ACHINES.—"Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & CO., BROWNSFIELD MILLS, MANCHESTER.

**T**UITION.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. See news columns.—A. V. ROE & CO., BROWNSFIELD MILLS, MANCHESTER.

**W**ANTED, immediately, volunteer assistance to help experiment with aero-hydroplane on South Coast. Apply PIFFARD, Lifeboat House, Shoreham Beach.

#### MODEL COMPETITIONS.

July 11.—Kite and Model-Aeroplane Association Steering Competition, Crystal Palace.  
 Aug. 12.—Kite and Model-Aeroplane Association Gamage Cup.  
 " 20.—Kite and Model-Aeroplane Association Self-Launching Models, North Ealing.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address AILERON, London.

Telephone: Mayfair 5407

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
3 months, post free	-	1	8	3 months, post free	-	2	9
6 " " "	-	3	3	6 " " "	-	5	6
12 " " "	-	6	6	12 " " "	-	11	0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

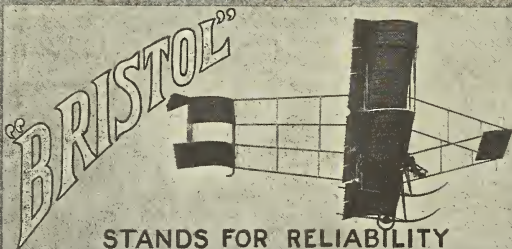
12  
WEEKLY

Vol. I.]

THURSDAY, JULY 6th, 1911

No. 5.

Going Strong.



STANDS FOR RELIABILITY  
AND  
STRENGTH.

This Photograph shows an  
**All British "BRISTOL" Biplane**

(Flown by Mr. Pixton),

Flying in a gusty wind of 30 m.p.h. at Brooklands, June 24th.

This was the  
**ONLY MACHINE IN ENGLAND  
FLOWN ON THAT DAY.**

**'Bristol' Aeroplanes are Reliable & Strong**  
**They are BRITISH BUILT from the Finest Materials.**

For full Particulars write to the Builders.

The . . .  
**"BRISTOL"  
FLYING  
SCHOOLS**  
are at  
**Salisbury  
Plain and  
Brooklands.**

THEY ARE EQUIPPED WITH  
**"BRISTOL"  
BIPLANES,  
FITTED WITH  
"GNÔME"  
ENGINES.**

Expert Tuition  
ensuring  
Rapid Proficiency.

**SPECIAL TERMS  
TO  
NAVY & ARMY  
OFFICERS.**

**THE BRITISH & COLONIAL AEROPLANE CO., LTD.**  
**BRISTOL ENGLAND**  
TELEGRAMS "Aviation" Bristol TELEPHONES N° 2 P.O. 74 } National  
3074 }

"THE AEROPLANE," JULY 13, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

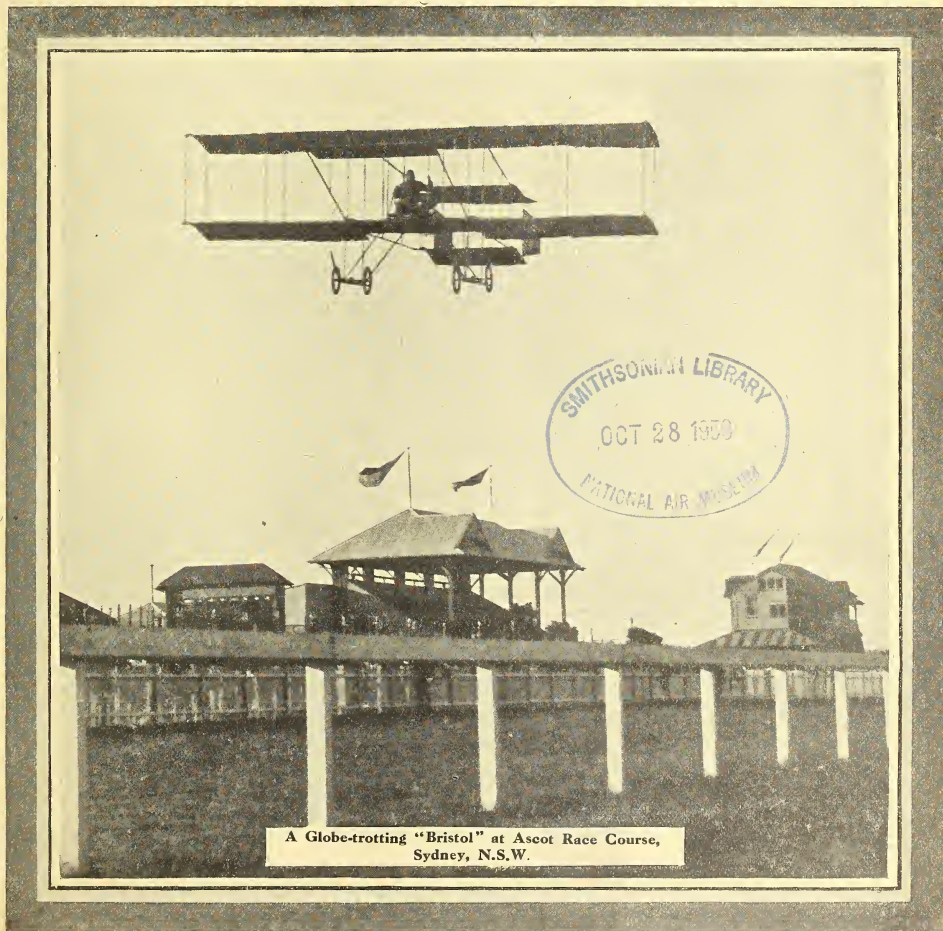
1<sup>st</sup>  
WEEKLY

Vol. I.]

THURSDAY, JULY 13th, 1911.

No. 6

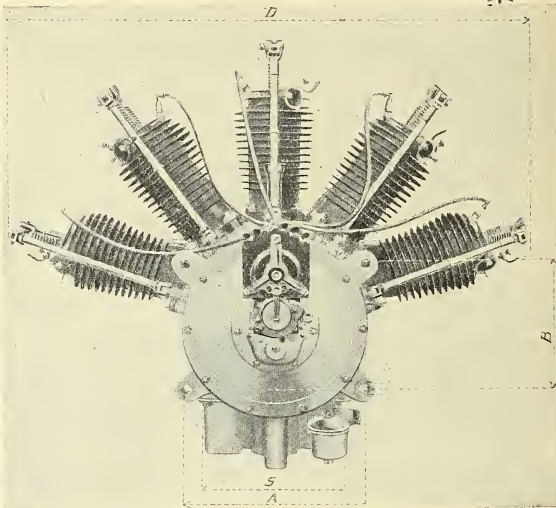
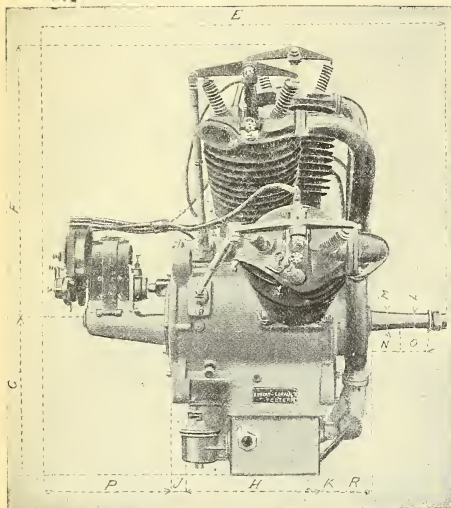
## The Aeroplane in Australia.



A Globe-trotting "Bristol" at Ascot Race Course,  
Sydney, N.S.W.



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40/50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

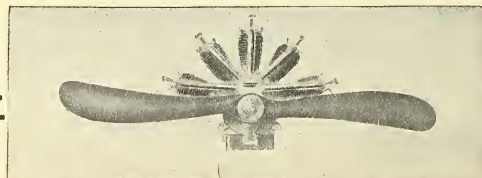
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	7.1"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	7.9"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL OPINIONS ... ..	123
THE CIRCUIT OF EUROPE ... ..	127
THE DIHEDRAL ANGLE, AND END LOSSES ... ..	130
AIR CURRENTS ... ..	131

	PAGE
THE DEPERDUSSIN MONOPLANE ... ..	132
THE WEEK'S WORK ... ..	134
CORRESPONDENCE ... ..	140

## Editorial Opinions.

**British  
Lethargy.**

The Continental competitors in the "European Circuit" all complained bitterly of the miserable reception that they got in this country. Few took any particular interest in them. Very few people took the trouble to go to the aerodromes to see them arrive or to see them depart, except at Dover, where the aerodrome, arranged by A.I.R., Ltd., under the direction of Mr. Miller and the Royal Aero Club's *commissaire*, Mr. C. G. Grunholdt, really bore some likeness to a French aerodrome on a similar occasion.

Lord Northcliffe excused the British nation to some extent in his speech at the *Standard's* lunch at the Savoy by saying that the blame lay with the early rising of the French rather than with the lazy habits of the British.

As a matter of fact, that really only partly accounts for the poorness of their reception. The real trouble of the matter appears to be that the halfpenny Press practically ignored the race after the start, and the *Standard* is much too good a paper to appeal to the mob. Consequently the mob was not stirred up to take an interest in the race.

Another cause was that the people in this country are not yet, as they are on the Continent, educated up to the idea that aviators prefer to fly at the time of day when there is least wind, and consequently they start very early in the morning. Practically no intimation was given to the readers of other papers than the *Standard* and *Evening Standard* that the competitors were likely to arrive so early as eight o'clock in the morning on the Monday, and the decision to start back at 6 a.m. on the Wednesday was only arrived at on the previous afternoon, and consequently the people who did not buy evening papers had no intimation of the fact at all.

If the public were to arrive at the aerodrome the tramway company ought to have advertised largely that a practically unlimited supply of trams would run out to Hendon in the early hours of the morning, and the bus companies should have done the same.

It is to be hoped that the lesson will be thoroughly learnt by the time that the "Circuit of Britain" starts, and that it will be possible for the ordinary man who does not happen to own a motor, and who cannot afford to buy a taxi for the occasion, to be able to get out to Hendon at 3 a.m. on the 24th to see the start.

Several of the competitors in the "European Circuit" will also be flying in the "Circuit of Britain," and we must do our best to remedy the bad impression that was then made upon them.

**That River  
Trip.**

The chief topic among those interested in aviation last week-end was Mr. Gilmour's flight from Brooklands down the Thames practically to the London Docks and back, passing through the heart of London. It was said that he flew over a portion of the city around St. Paul's, though on this point a mass of reliable evidence is available to the contrary, the statement that he did so coming merely from the daily Press.

There are those who hold that this particular flight involves no danger to anyone except the aviator himself, and that any objection to such a performance is merely prejudice against anything new. The writer cannot be accused of bias in this matter, for he is glad to be able to count Mr. Gilmour among his personal friends, and has no hesitation in saying that he is one of the finest fliers in the world.

If he had taken it into his head to commit *harkiri* by doing a *vol piqué* on to the top of the War Office with the idea of waking up its inmates there might have been some excuse for counting him a martyr to the cause of aviation, but a flight through the heart of London is in itself no more difficult than a flight over Salisbury Plain, and there is always a possibility of its doing harm.

Those who talk at large against grandmotherly legislation on the part of the Royal Aero Club still do not seem to realise the whole point of the argument, namely, that more firmness on the part of the Royal Aero Club a few months ago might have prevented Winston Churchill's Air Bill from ever coming into existence; and that, now the Air Bill does exist, we should all avoid giving the least excuse for further legislation on the part of the Government. They also forget that it is now within the power of Mr. Winston Churchill, or any succeeding Home Secretary, if he should be seized with a sudden attack of aerophobia, to issue an order absolutely prohibiting flying in any district he may fancy, and he can issue such an order when he pleases without consulting anybody except himself. In such a case any aerodrome within such district would, of course, be ruined.

As a matter of fact, as the law now stands, the whole welfare of the sport, science, and trade is practically at this moment in the hands of the Home Secretary for the time being; and, if for political purposes, it were found advisable to commence an anti-aeroplane campaign analogous to the anti-motor campaign which was carried on some years ago, there is no particular reason to think that any politician would sacrifice political support for the good of aviation. Consequently, aviators should be on guard against stirring up public prejudice.

Now we all know Mr. Gilmour's ability as a pilot, and we all know the reliability of the Bristol machine he was driving. A more reliable combination could not be found. But the best of men make mistakes, and the best of machines go wrong occasionally, and it does not take much gift of imagination to realise the prejudice which might have been caused if Mr. Gilmour had, even through an engine stoppage, landed either in the river or alongside it.

Such an accident would not be a good advertisement either for the sport or for the machine, for, of course, the vulgar herd would merely look upon it as an aeroplane accident, and would not realise that if the aviator had been over open country he could have come down comfortably.

If Mr. Gilmour, or any other aviator, be permitted to fly as best pleases him, and be not debarred in any way from following out his own ingenious ideas, he may, in the process of other exhibition flights, endeavour to perform some feat which even his great skill cannot compass, and so cause a serious accident, which, although it may not hurt anybody except himself, will, nevertheless, bring the sport as a whole into disrepute.

In flying, as in motoring, one cannot depend entirely on one's own skill, for one has to allow for the foolishness of other people, as well as for popular ignorance, and for that prejudice against anything new which is so typically English. It therefore behoves us to avoid anything which may give colour to the idea that aeroplanes are unreliable or dangerous.

The writer is not immediately concerned with how many aviators injure themselves, nor with how many other people they may injure, but he is very much concerned with the welfare of the trade and sport, and until we all know very much more about aeroplanes than we do at present, and until our engines are very much more reliable, it is better to stick to the open country where our mishaps pass unnoticed, or to aerodromes where they are understood, and appraised at their true value.

One good flier may fly down the river on a good machine without trouble, but unless some check is put on flying *through* towns as well as *over* them, he may be followed by a dozen bad fliers on bad machines in search of notoriety, and one smash will undo all the good that a dozen harmless flights have done. Let us remember the early days of motors, and be wise in time.

The next issue of THE AEROPLANE, which appears on Thursday, July 20th, will contain a considerable amount of information respecting

the *Daily Mail's* "Circuit of Britain." An endeavour will be made to provide readers with details of the machines and news about their pilots which will be unobtainable elsewhere. Readers can judge for themselves whether THE AEROPLANE has been successful in this respect in recent issues.

Some of the matter in the paper will be frankly intended for the enlightenment of those who are only now beginning to take an interest in aviation, and though it may be to a limited extent ancient history to the initiated, it will, nevertheless, be of assistance to regular readers and aviation enthusiasts, when they are called upon by less knowledgeable friends to explain the why and wherefore of the various machines to be seen on the "Circuit."

A rapidly increasing demand for THE AEROPLANE is very evident, and readers will be well advised to order their copies of the next issue in good time.

All paper-sellers can have THE AEROPLANE on sale on Thursday of each week if they insist on its being sent to them.



The Bristol tourists' biplanes at Ventnor.

**E. N. V.****ALL-BRITISH AVIATION MOTORS**

Made in Three Sizes, viz. :

<b>35 h.p.</b>	<b>* 60 h.p.</b>	<b>100 h.p.</b>
----------------	------------------	-----------------

\* Winner of Baron De Forest Prize of £4,000---1910.

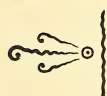
Mr. Sopwith's recent record flight over Philadelphia, U.S.A.,  
was made with a 60-h.p. **E.N.V.**

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESDEN, LONDON, N.W.

\*Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

**HOWARD T. WRIGHT**
**110, HIGH STREET,  
MANCHESTER SQUARE, W.**

 Telephone  
8574 GERRARD.
*Eight Types***Monoplanes**From **40** to **80** miles per hour**Biplanes**From **36** to **50** miles per hour.

Catalogue on Application.

**Winner of De Forest Prize.**



# You may not have an Aeroplane

but you are sure to  
have a Motor Car

If so, you will certainly require the  
Specialities advertised below.

## Atlas PUNCTURE PROOF INNER CASE

Not a tyre, tube, corset, shield, or makeshift repair. A clever device which renders the inner tube absolutely immune from puncture. Enables old, discarded, and even burst covers to be used, and an extra mileage of 1,000 to 3,000 can be gained from them. Prevents delay on the road through puncture. Halves the tyre bill, saves trouble and worry. No loss of resilience or speed. Simple and easy to fix. In all sizes for cars and motor cycles. *The Sphere* says—"Beyond question an absolutely reliable preventer of punctures. . . . No doubt remains as to its effectiveness . . . and as to the consequent economy in tyres and inner tubes."

**ATLAS NON-PUNCTURE INNER CASE SYNDICATE, Ltd.**  
124, High Street, Kensington, London, W. Telephone (2 lines): 4634 and 4635 Western.

Sole Agents for the Famous  
**BOBBETT TYRE LEVERS.**

Wholesale Agents:—**MANCHESTER:** J. E. FEAY, 28, Jackson's Row, Deansgate.  
**SCOTLAND:** J. THOMSON & SON, Lady Lawson Street, Edinburgh. **IRELAND:**  
H. WHITEHEAD & CO., 9, May Street, Belfast.

**Agents: THE UNIVERSAL AVIATION CO., 166, PICCADILLY, W.**

## The European Circuit.

### THE DEPARTURE FROM ENGLAND, AND THE LAST STAGES.

The Circuit competitors left at 6 a.m., much to annoyance of tired officials and would-be spectators who wanted to see them off at a respectable hour. Six a.m. is a bad hour, too late to make it worth while to sit up all night, and too early for one to get to the ground in the morning, especially in this country, where no trains or buses run before 5 a.m. Still a fair crowd turned up to the start, and one cannot expect aviators to fly over bad ground in bad weather just to draw a gate.

The real starters were "Beaumont," Garros, Vidart, Védérines, Gibert, Renaux, Tabuteau, Barra, and Kimmerling, in that order. Valentine started after Tabuteau, and was logged by the papers as having descended, owing to engine troubles, at Brooklands. As a matter of fact, he told THE AEROPLANE the day before that he was only going to fly over to Brooklands and leave his machine there, so as to practise on it for the "Circuit of Britain." He was afraid that if he took it to France he would not get it back in time to compete for the next "Circuit."

Kimmerling was delayed because, while tuning up the previous day, he burst a piston of his 70 h.p. Gnôme and had to spend the evening and most of the night motoring to Dover to fetch a whole new engine and fitting it.

At Shoreham the order was Védérines, Garros, "Beaumont," Vidart, Gibert, Tabuteau, Renaux, Kimmerling, and Barra. Gordon England, Fleming, and Pizey on Bristols, and Barber on the Valkyrie gave exhibition flights before and after the arrival of the competitors.

At Dover Védérines arrived in 1h. 56m. 44s. from Hendon, about 60 miles per hour. Vidart came in next (2h. 19m. 32s.), and "Beaumont" (2h. 25m.). Gibert did 2h. 18m. 10s., being second to Védérines. Then came Garros (2h. 27m. 56s.), and then Gibert (2h. 18m. 10s.). Kimmerling came down near New Romney. Everyone was very sorry for him, as he and Vidart are quite the most popular men of the Circuit. Renaux, in some mysterious way, got up to Ashford, and came down there. For once, apparently, the faithful Senouque had got out of his reckoning. Tabuteau got to Dover in 3h. 12m. 18s., and Barra in 3h. 30m. 20s.

On the arrival of the competitors they were entertained by the Mayor, Sir William Crundall, who has been the life and soul of Dover's enthusiasm. Dover has every reason to be proud of itself, for both at the arrival and departure of the competitors they were better greeted here than anywhere else. At the Mayoral lunch the Dover 100-guinea cup was presented to Gibert. Kimmerling arrived during lunch, and was enthusiastically received. Renaux and Senouque turned up during the afternoon.

In the course of the afternoon Lieuts. Longmore and Sampson, the naval aviators, who had flown their Short

biplanes over from Sheppey to see the competitors arrive, gave an exhibition of flying which showed that our Service aviators are quite the equal of the professionals.

#### Dover to Calais.

The start on the morning of the 6th was delayed for half an hour owing to mist over the Channel. As usual, Védérines made himself objectionable, and Mr. C. G. Grunholt, the Royal Aero Club's *Commissaire* at Dover, had to threaten to expel him and his machine from the aerodrome unless he behaved himself.

The cross-Channel times are worth noting. They were: Védérines, 30m. 14s.; Gibert, 33m. 28s.; Kimmerling, 34m. 23s.; "Beaumont," 36m. 1s.; Garros, 37m. 23s.; Vidart, 37m. 23s.; Tabuteau, 43m. 51s.; Renaux, 47m. 46s.; Barra (start delayed by engine trouble), 2h. 50. So, at any rate, Tabuteau's Bristol was the fastest of the biplanes, which is some consolation for the Bristol Company after all the work they have put in.

The two "solitary" heroes, Train and Duval, definitely abandoned the race, Train's machine having its tail hopelessly smashed, and Duval seeing the hopelessness of catching up the rest. Mr. Hill Reid wrote THE AEROPLANE on Tuesday from Bexhill that Duval had landed there in the evening and gone on again to Shoreham, but the plucky chap saw then the futility of continuing. Still he and Train will always be remembered as two of the most determined and tenacious aviators we have yet seen.

#### The Finish.

After staying the night at Calais, the competitors started on the 7th for Paris. The order of arrival was: Vidart, "Beaumont," Gibert, Garros, Renaux, and Kimmerling, but the placing on time was: 1. Vidart (2h. 33m.); 2. Gibert (2h. 36m.); 3. Garros (3h. 15m.); 4. "Beaumont" (3h. 26m.); 5. Renaux (4h. 13m.); 6. Kimmerling (4h. 21m.).

Védérines came down at Amiens, thus being done out of fulfilling his boast that he would win all the stages as soon as he got his racing Morane with the 70 h.p. Gnôme. Incidentally he proved that the 70 h.p. Gnôme is still wrong. This was also shown when Tabuteau arrived at Hendon with two of his cylinders absolutely black with overheating.

The classification at the finish, taking all stages in, is:—

1. "Beaumont," 58h. 38m. (Blériot).
2. Garros, 62h. 17m. (Blériot).
3. Vidart, 73h. 39m. (Deperdussin).
4. Gibert, 89h. 42m. (R.E.P.).
5. Kimmerling, 93h. 10m. (Sommer).
6. Renaux, 110h. 44m. (M. Farman).

Gibert, it must be remembered, left Paris 20 hours behind the others, so his real time is 69h. 42m.



Gibert's R.E.P., the only machine to go through with the same engine from start to finish.

News came in later that the reason for Védérines' stop was a burst cylinder on his Gnome, just when he was arriving at Amiens. After starting again, presumably with another new engine, he came down a second time at Compiègne, and eventually had to finish at Buc, the Vincennes control being closed. Poor unfortunate Tabuteau, after getting to Amiens without trouble, was forced to come down at Clermont-sur-Oise, and he also had to finish at Buc. Barra also finished at Buc, having been delayed at Amiens. Though Barra covered the whole course, he was outside the time-limit on the Brussels-Roubaix and Roubaix-Calais stages; and for the same reason Tabuteau was ruled out of the Utrecht-Brussels, Brussels-Roubaix, Roubaix-Calais, and Calais-Paris stages, though he gamely covered the whole course.

#### \* Observations.

It is particularly worthy of note that the only man of the lot who got through on one machine with one engine was Gibert on his R.E.P., and undoubtedly his is the most solidly built machine of all, being of steel throughout. Also it is, theoretically, the most stable, having a non-lifting tail, and wings of good design, so what one may call "practical theory" has been justified.

"Beaumont" and Garros won because they were more experienced pilots than Gibert, and had unlimited supplies of spare parts and mechanics. When Gibert had a straight-away fight he was quite their equal, as, for instance, from Calais to Dover, Calais to Paris, and Liège to Utrecht. It is said that the competitors with Gnomes used no less than 32 engines on the "Circuit." This may be an exaggeration, but certainly the number of engines and machines they consumed was very great.

Vidart, also, when once he showed up in the front rank, had practically an unlimited supply of machines and engines, as had Védérines.

The biplanes were obviously outclassed. The Henry Farman showed up very badly, smashing up time after time, even in the hands of so skilful a driver as Wijnmalen. Renaux's huge Maurice Farman was too slow to catch crows with, but he and his passenger Senouque deserve immense credit for their pluck in slogging through.

Tabuteau also gave a fine display of pluck, and his Bristol showed itself faster than anything else of its type, albeit the front elevator and engine behind type cannot be as fast or as stable as a machine which has the weight forward and a non-lifting tail, and so cannot be as easy to handle in big winds or at high speeds. Anyhow there is considerable satisfaction in knowing that the Bristol Company have built the fastest machine of this type yet produced, and one hopes to see them ere long take a similar position in the manufacture of the more efficient type with engine in front and a non-lifting tail.

Tabuteau shares with Renaux and Barra the honour of getting through on one machine, in spite of much breaking and repairing.

Duval's performance was magnificent, but, though his little Caudron biplane is of a type approaching what is wanted, it was unable to stand the effort of putting up a lone-hand fight against all the big manufacturers, and Duval himself has had very little experience of cross-country flying, so that he probably had accidents which a more experienced man might have escaped.

Train, with his badly designed but well built monoplane, also deserves special mention as one who got so far on sheer pluck and yet could not manage to reach the finish. His efforts throughout were absolutely heroic.

Kimmerling also deserves special mention for his personal pluck. The Sommer monoplane, owing to the dihedral angle of the wings, seemed more laterally stable in the air than the others, but its general design and workmanship is about as bad as can be.

Taking the "Circuit" all round, it has been a triumph of mind over matter, for most of the pilots got through in spite of their machines rather than because of them. It is absolutely pitiful, in view of the knowledge that exists even to-day as to how a flying machine ought to be designed and built, to see the money that is being poured out by most of the French manufacturers in forcing badly built and badly designed machines, fitted with utterly wasteful engines, to get into the air and stay there for long periods.

Still, they have had plenty of opportunities of learning lessons from the "Circuit," and it is to be hoped that they will take them to heart, and profit by them.

C. C. G.



ALL THE WINNERS:—Beaumont, Garros, and Vidart.



**GORDON-BENNETT CUP, 1910**C. Grahame-White with **CHAUVIÈRE PROPELLER****GORDON-BENNETT CUP, 1911**Weymann with **CHAUVIÈRE PROPELLER****PARIS-MADRID**Védrines with **CHAUVIÈRE PROPELLER****PARIS-LONDON**

Valentine, Védrines, Tabuteau, Garros, Barra, and Renaux with

**CHAUVIÈRE PROPELLERS**

Sole British Concessionaires

**GEO. W. GOODCHILD & PARTNER,**

30-32, Farringdon Road,

**LONDON, E.C.**Telegrams:  
"Whizzing, London."Telephone:  
1707 Holborn.**FROM VICTORY TO VICTORY.****BLÉRIOT****MONOPLANES.**

1910.—CIRCUIT DE L'EST (France) ...	1st. LEBLANC	}	ON
	2nd. AUBRUN		BLÉRIOT.
1911.—PARIS-ROME ... ..	1st. "BEAUMONT"	}	ON
	2nd. GARROS		BLÉRIOT,
1911.—CIRCUIT OF EUROPE ... ..	1st. "BEAUMONT"	}	ON
	2nd. GARROS		BLÉRIOT

Tuition Free to Purchasers.

Aviation School, Hendon (London, N.W.).

**FOR CATALOGUES AND ALL PARTICULARS APPLY TO—****L. BLÉRIOT** (Sole Manufacturer), **BELFAST CHAMBERS, 156, REGENT ST. LONDON, W.****NORBERT CHEREAU, General Manager.**Telegrams: **BLERIOPLAN, LONDON.**Telephone No.: **14827 CENTRAL.**

## The Dihedral Angle and End Losses.

By P. K. TURNER.

At present the only satisfactory method of obtaining lateral stability appears to be the use of a dihedral angle. Various complicated theories have been written round the subject, none of which are to much effect.

In essence, the matter is perfectly simple. Looking from the front at a machine with a dihedral angle, we see that both the planes are upwardly inclined.

The pressure on planes, as is well known, is always perpendicular to them: so that when the planes are inclined some of the pressure will take the form of an inward push instead of a lift. If now the machine be tilted sideways, one plane will be more inclined than the other. The less inclined plane, which is the one on the *lower* side of the machine, will have more lift and less inward thrust, the other will have less lift and more thrust. The effect of the difference in lift is to bring the machine on an even keel. Also, the unbalanced inward thrusts of the planes will result in a sideways movement of the machine towards the lower side, which helps it to right itself.

When turning corners, the dihedral angle makes banking much safer, as it gives rise to a controlling force which tends to prevent those spiral dives or side-slips to the inside of the curve which are so dangerous.

The inherent disadvantage of the dihedral angle is very slight, compared with its advantages. In two ways it gives rise to a loss of efficiency. First, as has been explained above, part of the lift is transformed into an inward thrust, the thrusts from the two wings neutralising one another and doing no work. But the amount of lost work is very slight. If a certain pair of wings lifts 750 lbs. when placed level, it will lift 748½ lbs. when each wing is at an angle of 1 in 15, and 747½ lbs. when 1 in 10. This is allowing for the inward thrust. But there is another cause leading to loss of efficiency: this is "end losses."

When a surface is forced through the air at an angle, as in an aeroplane, the air pressure below it is above normal and that above it is below normal. (This reminds one of the Irish gentleman's remark to his lady manservant: "Joseph, I declare you've been quite early of late—ye were always behind before; if you go on like this it's you that'll be first at last!")

It is this difference in pressure that gives the plane its lifting power. Another natural result is that there is a tendency for air to leak out sideways from beneath the tips of the plane, and to leak in above the tips. Whenever this happens there is bound to be a loss of efficiency. The great cry against the dihedral angle is that it increases this loss to a large extent. Personally, I am not convinced that the increase in loss is so very large. I think that a low aspect ratio—i.e., wings of small span and large chord—causes much greater loss than any reasonable dihedral angle.

Whether this is so or not, it is comforting to know that this objection can almost be removed altogether in various ways. The attempts made to-day are most of them rather expensive to carry out and are not likely to be satisfactory. It will, however, be as well to recapitulate them, if only for the moral welfare of those that use them.

One system is to decrease the angle of incidence, the camber, or both, from the body to nothing at the tips: the theory being that, under these circumstances, the tips do no work at all, *ergo* there can be no tendency to end losses. As far as it goes, this is a most excellent argument: only it completely overlooks the fact that, as the air above and below any one rib is always doing more work than that above and below the next one outside it, there is a constant tendency to set up cross-draughts, not only at the tips but all along the surface; for, as I have pointed out, the whole cause of cross-draughts is that the air displays an intelligence almost human in moving always towards the spot where it has to do least work.

Tapering the wing is a very favourite method. It certainly has the quite irrelevant advantage of making the greater part of the lift on the wing spars come nearer to the body, which means that the spars may be made lighter. But it has very little effect on the point under consideration, and it involves making every rib different. Unless the makers are in a position to build wings by the score, this adds very much to the cost and labour of wing-building. A further disadvantage is that it diminishes the amount of warp obtainable.

Rounding off the tips of the wings is a little better all round than tapering. It slightly diminishes losses, and the disadvantages of taper wings, though all there, are not quite so strongly developed.

All these devices, however, suffer from the same defect—the mistake which is evident in the methods of a doctor who, seeing large and angry pimples (the Plague of Job, in fact) on the face of a patient, fills him up with skin food and lotion instead of pills for the "innards" and iron for the blood.

Three methods seem, on the face of the matter, to have a better chance of success.

One is to make the rear spar longer than the front spar, and to have at the tip of the plane two or more ribs, which, while they converge to a point at the leading edge, maintain at the trailing edge their usual distance apart. This will have the effect of making the air do work if it attempts to leak out at the tip. Since, as explained above, it is the congenital weariness of the air which causes the difficulty, the extra width at the trailing edge, coupled with the fact that new air is always striking on the forwardly-inclined tip of the plane, will prevent the leakage.

A second method is to *increase* the angle of incidence, the camber, or preferably both in unison, toward the tip. This will probably stop the leakage, but has the disadvantage of setting up a tendency to cross-draughts, as explained above, but in the reverse direction.

These methods also have the same disadvantage as have tapered and round-ended planes: additional cost of construction.

The method which I myself am inclined to favour adds very little to the cost. It is also in successful use to-day on the Sanders biplane, though, personally, I have other ideas as to how it might be applied.

It simply consists in giving the spars a downward bend at the tips. This applies the same curative principle as does the wing with increasing angle, mentioned above, viz., a tendency to cross-draughts in opposition to the leakage. Where it has the advantage is in the fact that, with the curved-down tip, the opposition draughts are only set up just at the tips, where they are wanted.

The bending can be done by steam, which is not always satisfactory. A better method is to cut the spar into horizontal layers about ⅓ of an inch thick, running the saw in from the tip as far as it is desired to bend the spar. When this has been done, the spar can easily be bent to any reasonable shape. Then, while it is held in a jig to the desired curve, the layers are glued and screwed together, after which the spar will keep its curve, regardless of damp, etc.

It is unnecessary to curve the plane very deeply. All that is required is that the last two or three feet should be bent, the tip making a downward angle equal to the dihedral of the machine.

This device, if properly proportioned, produces no transverse currents; all it does is to check those existing, and it has the advantage of being easy to arrange and cheap to carry out. It is necessary, of course, that the last pair of plane-struts should be placed inside the commencement of the curve, for a curved spar is not good under compression. This, however, is no disadvantage, for a cantilever, such as is formed by the overhanging length, is as strong as a spar supported at both ends, provided its length be not more than one-half, i.e., if the plane-struts are six feet apart, an overhang of three feet is as strong as the rest of the plane. As a matter of fact, the overhang is a distinct advantage, for, with the same span, it means that the distance between plane-struts is diminished, which, of course, implies less strain on the spars, so that these can be made lighter. It is in little points of this kind that one obtains efficiency.

### Another Amphibian.

If any reader of THE AEROPLANE happens to be having a holiday for a month or so, a good opportunity offers for him to assist in experiments with an aero-hydroplane.

Mr. Harold Piffard, who has already done a great deal of experimental work with ordinary aeroplanes, is now establishing himself on the South Coast, where he intends to experiment on the sea with a newer model of his old machine. The sport should be excellent and the experience gained may be very valuable.

## AIR CURRENTS.

## AERODROME DIALOGUES.—II

CONVERSATION BETWEEN A STEADY INVENTOR (S.I.) AND A WELL-KNOWN AVIATOR (W.K.A.).

S.I.: Excuse me, sir, I believe I am addressing Mr. Snorter, the well-known aviator?

W.K.A.: I am Mr. Snorter.

S.I. (meekly): I wanted to interest you in a few little inventions of mine. I have studied birds and insects for the last forty-five years, and am the only man who really understands how they fly. I have also invented many flying machines, and would like to explain to you how they work.

W.K.A.: I am rather afraid that just at present—

S.I. (quickly): Here is a drawing of my latest machine, which I call the "Aerocopter." It raises itself from the ground by drawing air from the top of the planes and ejecting it under them, thereby causing the machine to lift.

W.K.A.: I am afraid an important appointment—

S.I. (buttonholing him): Many years ago when I was a boy I used to lay on the grass and watch the smoke rising from the factory chimneys, and wonder how this ascensive force could be applied to flying machines, and only quite recently have I solved this question. This machine, which I call the "Coronoplane," in honour of the Coronation, is especially arranged to fit the average factory chimney. It is placed at the bottom of the chimney, there is a door in the chimney

by which the airman enters, then he sets the engine going, and the hot air in the chimney helps it to rise. It is also specially useful for Atlantic liners and warships. I have already sold a small share (one 250th part, to be exact) to an American millionaire who was going to finance me but had to go back to America in a hurry. I also have a—

W.K.A.: I must ask you to—

S.I.: A patent propeller, by which the aviator can reverse the pitch of his propeller and check the descent of his machine if it is falling too fast; also another patent of mine is a rope ladder which is attached to the aeroplane so that it can be let go quickly, so that if anything goes wrong with the aeroplane the airman can reach earth safely by climbing down it.

W.K.A. turns round, leaving a button in S.I.'s grip and walks rapidly to his shed.

S.I. (trotting beside him, gesticulating and talking): I am at present arranging a flying machine trip to the North Pole. My machine (of my latest invention) will be called the Aurora Boreoplane, and will start on the 26th June, 1912, at 3 o'clock in the afternoon from Liverpool. Can I sell you a—

W.K.A. disappears suddenly.

S.I. (soliloquising): What very difficult men these airmen are to get on with.

## Fowl Play.

[The following interviews must have been sent to 166, Piccadilly in mistake for the purloins of Fleet Street, but, fascinated by their literary value, we could not find the heart to refuse them. At the same time we disclaim all responsibility for their accuracy.—ED. THE AEROPLANE.]

French airmen have had occasion recently to complain of attacks made upon them by eagles. It is really astonishing how little known are the similar experiences which have befallen many of our own aviators.

"What a funny thing you should mention it," exclaimed Mr. C. Howard P.—t—n, with an hysterical laugh, "seeing that it was only yesterday afternoon that I had the most exciting experience of my life.

"I was well up over Byfleet at the time, when suddenly the most enormous bumble-bee I have ever seen—it must have spanned at least 2 ins. from tip to tip—swooped down at me uttering strange cries, much like those of an Esperantist with earache.

"For some seconds the bee hovered round me undetermined, mouth open, eyes blazing, then like a flash the monster darted down and commenced to maul me badly.

"It seemed an eternity as we rocked to and fro in the intricacies of the catch-as-catch-can embrace. First I would gain a slight advantage and pluck out a handful of feathers, then with redoubled force my infuriated assailant would progress a notch in its evident ambition to force me back into the petrol tank.

"Although half-dead with fatigue and apprehension, yet never for an instant did I lose my head, as many a weaker man might have done; instead, with the utmost coolness, I deliberately made a noise like a tulip. For a second the bee hesitated.

"In that second I had snatched my water-pistol from behind my ear, and, taking careful aim, I fired three shots in rapid succession, and the danger was past.

"As you can well imagine," concluded Mr. P.—t—n, "I lost no time in making for home and friends, and it was only after a stiff glass of buttermilk and a slice of seed-cake that I regained my shattered nerve. But let us talk of pleasanter topics. I am told the roads are in excellent fettle just now for cycling, and —"

Mr. Astl—y was frankly amused. "No! I cannot truthfully say I have ever experienced trouble from fowls of the air," he replied, as he removed a pebble from his boot; "but I will tell you of an experience which sent the hot blood pulsing through my veins, and it was no laughing matter at the time, I can tell you.

"It was some years ago now, and I had taken my machine

out for the first time to practice rolling. I was getting along very nicely, and was just nearing the Paddock end of the ground when, without any warning whatever, a full-sized grass snake suddenly sprang into the air with the velocity of a bullet and entwined itself firmly round my neck. The blood sang in my ears and everything seemed to be turning into inky blackness, yet I did not despair.

"Cudgelling my brains, I suddenly remembered what I had once read in a *Daily Express feuilleton* of how the unscrupulous Jasper had successfully mesmerised the young and inexperienced heroine into handing him over her gummel watch (with chain). I determined to imitate black-hearted Jasper, and, fixing my orb upon the reptile, I willed with extraordinary ferocity. To my dismay the brute stood the ordeal remarkably well, yet, remembering the old saw that youth will be served, I merely swallowed the lump in my throat and willed the harder.

"Picture to yourself my unbounded joy when, after a few moments of intense mental torture, the serpent shivered slightly, then slowly uncoiled, and with the tears streaming down its face offered me as handsome an apology as man could wish.

"With head bowed in shame, the beast then swarmed down the propeller, and was quickly lost to view in the gathering dusk.

"I was completely unmanned after my terrible experience," concluded Mr. Astl—y; "and, believe me or believe me not, I am fully convinced that, had I not been wearing Jasper's next the skin at the time, I should have fainted dead away."

"Attacked by birds? Why, yes! scores of times," exclaimed Mr. Robert L—n—, with a fascinating smile. "The worst adventure, though, of that kind which I ever had was on my Irish Channel flight. What's that? Like to hear about it? Well, loosen your collar, and I'll tell you."

"I was just about halfway across, and, wondering to myself in a dreamy sort of way if Home Rule would ever really be a success, when my musings were rudely disturbed by a gigantic flying fish, which, rising at a terrifying angle from the sea below, commenced to butt me in the pit of the stomach in a most vigorous and ungentlemanly fashion.

"For a few moments I was too disgusted at the treatment meted out to me by a perfect stranger to do anything in the way of protecting myself. However, quickly pulling myself together (I wear Wendall's 'Bulseye' Braces) I commenced to stroke my visitor quietly, almost courteously, across the head with my life preserver, without which I never travel, and with a scream of emotion the brute fell back into the sea.

"Yes, it does look a little brighter now. What! Your four-wheeler at the door? Well, I mustn't detain you. Mind the cat's saviour. Good morning." H. M. M.



## The Deperdussin Monoplane.

The drawings of this machine should be especially interesting at the moment, as the dimensions were taken from Mr. James Valentine's own "plane" immediately after the "European Circuit."

The Deperdussin, it must be freely admitted, has certain faults; but, notwithstanding, it has proved itself to be a thoroughly practical machine.

The wings are of the usual double-surfaced type, tapering slightly towards the tips; and there is no dihedral. The butts of the front spars join at the extreme front of the fuselage, the engine having no bearer in front of it; it appears to have grown out of the fuselage like a prehensile mushroom.

There is a cowl over the engine, and the leading edge of the wings is carried forward, so that oil and smoke are carried clear below the wings.

The fuselage is long and shallow, keeping its depth of 1 ft. from end to end. There is a sort of "sump" built under it for the front 7 ft. or so, to allow more room for fuel tanks and

for the pilot's feet. The stabilising plane (it lifts, and is therefore *not* an empennage) is very thick, and lifts rather too much for my personal taste. The rudder is behind the flaps, thus gaining in leverage and being simpler to arrange.

The chassis is simple and is very light; it is not very strong, but is designed, the story goes, so that the aviator can carry two or three spare ones on the machine.

The control is very well designed. The warping wheel is carried on a horizontal bar, which is fixed on top of two levers, pivoted one on each side of the fuselage, the idea being to avoid any risk of injury to the pilot through his being thrown on to his control lever.

The power plant consists of a Gnôme engine, affixed in the apparently eccentric, but certainly accessible, manner described above, and driving a "Rapid" propeller.

The writer begs to thank Mr. Valentine for permission to visit the shed, and hopes to see him flying the machine in a prominent position in the "Circuit of Britain." P. K. T.

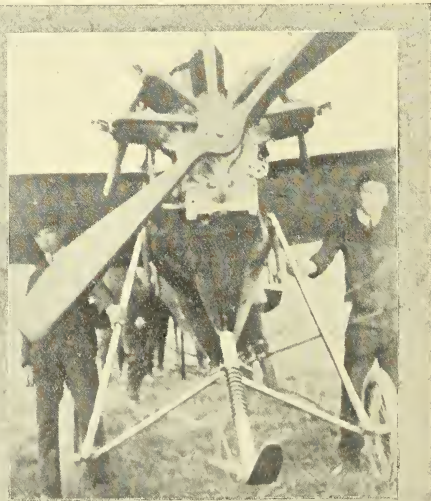
### Fool Tricks.

America has sent us the word "stunts" to replace to a large extent the older Americanism, "fool tricks," the difference being that "stunts," while remaining "fool tricks," may have some motive, such as the advertisement of self or goods behind them. Briefly, a "stunt" may be defined as a difficult or dangerous performance which serves no really good purpose.

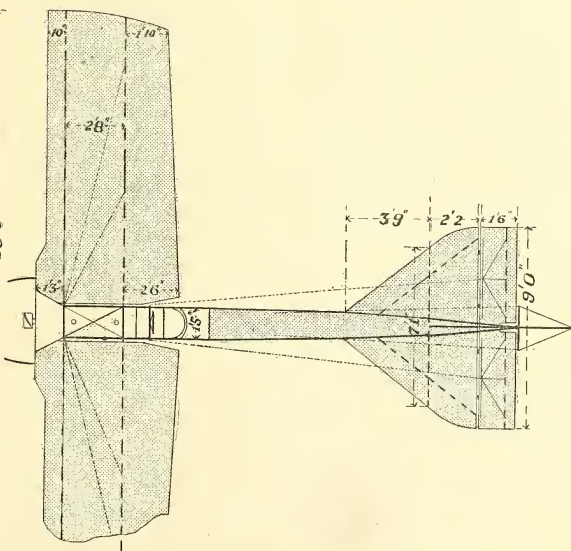
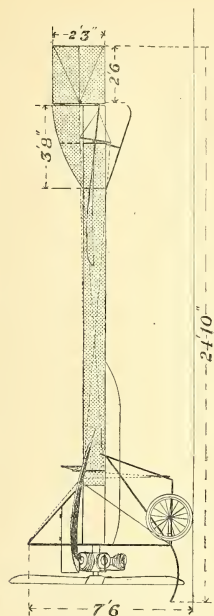
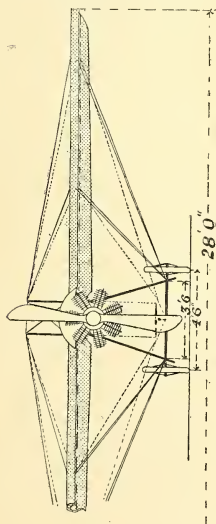
America, the land of deceptive advertising, is naturally great on "stunts." The latest is Lincoln Beachey's idiotic flight under the suspension bridge and over the falls at Niagara. No one learnt anything from the flight, the worst kind of passion for sensationalism was gratified, more colour was given to the popular idea that aviators are only mountebanks—as most of them are in America—and altogether the whole performance is a discredit to the sport and science. The pity is that the aerial mountebank in question has survived to do more "stunts," in which he may possibly damage others as well as himself.

### Hamel's Recovery.

Among the visitors at Brooklands on Saturday was Gustav Hamel, still looking rather "rocky," but really wonderfully well for a man who had had such an appalling smash as he had had only a week before. He talks of going over to France to try for the 150 kilometre record, just to show he can beat Weymann's time on the Neuport. For Hamel's own sake we all wish him luck, but at the same time it is to be hoped that his new Blériot will not be anything like the one he was driving at Eastchurch. Everyone likes Hamel, and the prejudice against the type of machine he then drove would be doubly strong if he were again injured by it. Still the machine has its points, and if the fuselage were redesigned, the chassis somewhat altered, and the wings made longer and bigger, no doubt it would become quite safe to fly and very efficient. The machine is certainly fast for, when Hamel tested it, he was doing 2m. 40s. and 2m. 42s. per lap, against Weymann's 2m. 43s. and thereabouts.



THE MAN AND THE MACHINE.—Gibert, who took his R.E.P. through the European circuit without so much as changing a sparking plug.



## DEPERDUSSIN MONOPLANE.

Surface of Main Planes: 150 sq. ft.

" " Tail Plane 30 "

" " Elevator 150 "

" " Rudder 6 "

" " Fin 3 1/4 "

Wright (without Pilot): 550 lbs. Speed: 60 m.p.h.

Engine, Gnome, 50 hp. 1050 r.p.m.

Propeller: "Rapid"; 8'0" diam. x 7'1" pitch.

*Wright*

## The Week's Work.

**Morison Flies the Channel.—A Policeman Aviates.—Osram Lamps in the Air.—Gilmour in the River at Henley. Barber and a Passengeress Fly from Shoreham to Hendon.—Visitors' Day at Brooklands.—Four new Brooklands Pilots.—Army and Navy Busy.—Liverpool to Manchester and Back and no Prize.—Invasion of the Isle of Wight.—Cross-country Flying Everywhere.—Over-sea Flying at Eastchurch, Shoreham and the Solent.**

### Monday, July 3rd.

**BROOKLANDS.**—Blondeau-Hewlett pupils busy. Johnstone took his brevet, flying at 400 to 500 feet. Hilliard did second half of his, having been stopped by rain previous night. Average height 200 feet. Now returned to America. Cheery smile missed at Brooklands.

**EASTCHURCH.**—Lieuts. Samson and Gerard arrived from Dover towards seven o'clock, alighting with perfect *vol planés* from 1,000 ft. Average height throughout journey about 3,000 ft., and wind at this height blowing at twenty miles per hour. Immediately on arrival Lieut. Gregory, R.N., took possession of No. 38 machine and flew over village of Eastchurch and surrounding country at about 1,500 ft.

**HENDON.**—Great excitement over the arrival of Circuit competitors. Compton Paterson doing exhibition on the "Baby" while the wind was doing thirty. Grahame-White out on same machine, making characteristic trick flights. Greswell tried next, making good show considering how seldom he flies a biplane. Only been on the "Baby" once before, and that three months ago. All afternoon Grahame-White, Paterson, and Greswell giving exhibitions on the "Baby," also Hubert flew the school Farman. Numerous passenger flights, Paterson taking thirteen passengers consecutively. Also made long flight over the district at a height of 1,500 feet, with Guy Lewin, of Friswells, Ltd., and his two sons on board. Hubert took eleven passengers, among them Gibert, the R.E.P. pilot, an old friend, once mechanic to Grahame-White at Pau. Lieuts. Barrington-Kennett and Reynolds, of Air Battalion, arrived from Farnborough in the Bristol to meet Circuit competitors.

### Tuesday, July 4th.

**BROOKLANDS.**—E. V. B. Fisher out tuning up the "Henrietta." Pixton on Bristol, Blondeau-Hewlett pupils and one or two others out.

**HENDON.**—Greswell and Paterson giving exhibitions on "Baby" morning and afternoon. Paterson at 5 o'clock out to test capacity of "Baby's" tanks. Remained up for an hour and a half at 2,500 feet, and came down in a corkscrew *vol plané*. Hubert and Paterson in evening giving passenger flights. Driver, one of latest pupils, made several good practice flights, attaining a height of 500 feet. His progress under Hubert exceedingly rapid. Circuit competitors giving exhibitions. Garros, Valentine, "Beaumont," etc., did short flights.

**SHOREHAM.**—Interesting experiment to test utility of flying machine as means of rapid transport. General Electric Company, Ltd., sent consignment of Osram lamps from Worthing depot to Messrs. Page and Miles, Ltd., Brighton, by air per Valkyrie monoplane. Experiment conspicuous success, perfect descent made in the Hove Marine Park (by arrangement with the Hove Corporation) at 8 p.m., where messenger with cart awaited the arrival and conveyed case of Osram lamps to destination. First time aerial transport has been attempted in England, but Parmalee, on Wright, carried bale of "soft goods" in America some 40 miles. Crowd of over 5,000 at Hove Park cheered the "intrepid aviator." Enclosure a very small one, a little over 250 yards from corner to corner. The sporting inventor of the Valkyrie, who piloted his own machine, is presenting proceeds to a special prize fund for the further encouragement of aerial navigation. Good man.

Fine exhibition flying in evening by Gordon England and Fleming on Bristols, both showing remarkable control over machines, and proving quite the equal of, if not superior to, the French fliers on the Circuit.

**SALISBURY PLAIN.**—Jullerot, left in charge in absence of Pizey, not neglecting opportunities. Gave a good hour and a half's tuition to Watt—the newest pupil—and Lawrence, whose progress to proficiency has been almost meteoric. Work concluded by high flight by Tédard, returned from the "Circuit," who went up to 2,000 feet. Jullerot also made cross-country flight, winding up with spiral *vol plané* of the type for which Tabuteau is famous.



**The Tourists at Ventnor:—Standing, Judd, Fleming, and Pizey. Seated, Gordon England and R. Preston.**

**EASTCHURCH.**—Wind rather "puffy" until towards seven o'clock, when calm set in, of which naval officers took full advantage. Lieuts. Samson, Longmore, Gerard, and Gregory each making several good cross-country flights. Lieuts. Longmore and Gregory each carried a passenger on one excursion. Latter, with Mr. Travers in the passenger seat, going over to Leysdown and out to sea for a considerable distance, returning by way of Eastchurch village, and descending from 1,200 ft. with nice *vol plane*.

### Wednesday, July 5th.

**BROOKLANDS.**—Visitors' Day. Quite a busy time. Valentine brought his Deperdussin over from Hendon and left it here. Started same time as Circuit competitors, just for fun. Newspapers quite sympathetic over his "breakdown at Brooklands." Valentine never intended anything else. Barber arrived from Shoreham with Miss Meeze as passenger. Very fine flight. Barber every reason to be proud of himself and his Valkyrie. By miles an hour the fastest passenger-carrying machine in the British Isles, and only beaten abroad by Nieuport two-seater, if by that. In morning Paterson, on "Baby," paid visit from Hendon, and returned in evening. Popular chap Paterson, always pleased to see him. Brooklands aborigines busy. Petre, a new recruit to George England's school, rolling 15 minutes on "Henrietta." Manisty did two first straight flights on same machine. Fisher flew it then for five and again for ten minutes. Pixton out on Bristol, with Blacker as passenger, and then did long cross-country trip with P. K. Turner, of THE AEROPLANE, as passenger, over Weybridge and Byfleet.

Gilmour on Bristol flew down river to London Docks, creating more controversy than the flight merited.



DOVER.—Lieuts. Samson and Longmore, each piloting a "Short" naval biplane, arrived from Eastchurch. Received there "with open arms," so far as officials of local aerodrome were concerned. Large crowd had paid for admission under impression that exhibition flights would be indulged in by competitors in "European Circuit." These gentlemen quite naturally preferred to take no risks in view of the early start for Calais on the morrow. Finding vociferation met with no response, crowd became restless. Then Lieuts. Samson and Longmore swooped down upon them. Aviators met on landing by Mr. G. B. Cockburn, their late tutor, who prevailed upon them to stay the night at Dover, and all three proceeded to give right good exhibition of flying—*vols planés*, figures of eight, and passenger trips making up programme. Landing for the last time, they were loudly applauded by the large crowd, and were warmly thanked by the officials for their timely assistance. Meanwhile "Short" biplanes the centre of attraction for foreign aviators present, much struck with fine performance of machines in the air and their sound construction.

EASTCHURCH.—Fine flight over the country by Ogilvie, on Baby Wright with N.E.C. engine, out practising. Timed to get up to 1,000 feet in the first minute, and continued up to 3,000 feet, machine flying excellently.

SHOREHAM.—Starting at 5 a.m., Mr. H. Barber, the Government's donor of Valkyrie aeroplanes, took up a feminine passenger to make a non-stop journey to Hendon on the type B Valkyrie military monoplane. Miss Edith Meeze, learning to fly the Valkyrie, was in the passenger's seat. Machine rose quickly to over 3,000 feet, Barber heading, as he thought, for Brooklands. Road unfortunately went out and lost itself, so, when half the distance to Brooklands, pilot found he was quite off route. Relying upon map, he made a wide circle, and picked up Guildford. Thence Brooklands was soon reached, and stop was made. After fresh start, road again lost, so the Valkyrie came down near Kings Langley, north-west of Hendon, at the country house of Mr. Bradford, who kindly entertained the aviator and aviatrix to breakfast. After breakfast, amid enthusiastic excitement of villagers, start again made, and this time there was no difficulty in getting home. By far the longest cross-country flight yet made by a feminine passenger. R. C. Fleming and Gordon England did good work by flying on two Bristol biplanes from Shoreham to Ventnor, Isle of Wight. Crossed Solent at Ryde. Took an hour over the journey against head wind. Hard workers these two, and both fine fliers. Real cross-country journeys like these more use to the sport than a dozen cheap advertisement flights and trick "stunts."

HENDON.—Start of the Circuit competitors most impressive. Among the spectators at the departure of the competitors of the "European Circuit" from Hendon on Wednesday were Lieuts. Reynolds and Barrington-Kennett, Mr. Barrington-Kennett having flown one of the military Bristols from Farnborough on Monday morning, with Mr. Reynolds as passenger, to see the arrival. On the Wednesday morning after the competitors had left, Mr. Barrington-Kennett, for fun, took up as a passenger one of the policemen who were guarding the aerodrome; this being, presumably, the first occasion on which a policeman on duty has gone up in an aeroplane. Later he took up a number of other passengers, among them Roy DeLaCombe, of THE AEROPLANE.

Later in the day Mr. Reynolds flew over to Brooklands with Howard Pixton as passenger, then returned to Hendon, and afterwards he and Mr. Barrington-Kennett together on the same machine flew back to Farnborough. Undoubtedly our military aviators take every opportunity of practising.

After departure, Paterson left at 10.15 a.m. on "Baby" for Brooklands to superintend dismantling and removal of a Sommer biplane. Driver made several practice flights, and at first attempt made excellent *vol plané* from 500 feet. Hubert took passengers during evening in the military Farman, among passengers being two lady friends that Sir Thomas Lipton had brought with him. Paterson returned from Brooklands about 7.30 p.m., doing journey in 21 mins., or, approximately, 60 miles per hour.

Type B Valkyrie racer out, giving passenger flights to Clutterbuck, Wells, Perry, and Miss Prentice. All did well in managing the elevator. Miss Prentice—only sixteen years of age—took the machine round almost a complete circuit.

VENTNOR.—England on one Bristol, Pizey and Fleming on another, started out for Ventnor; had very easy time as no wind blowing. Crossed water just west of Selsea, and touched Isle of Wight at Bembridge. Average height, 1,600 feet. Flew direct over island to Ventnor, which was marked by

very large bonfire. On sighting ground, England made *vol plané* to 200 feet, made one circuit, and landed on sheets placed on ground to mark spot for landing. Got a great welcome. England caused great amusement throughout having brought large suit case on passenger's seat. This contained clothes for the three aviators, Pizey, Fleming, and himself. Local papers have styled England the 'Carter Paterson of the Air. The other two had arrived about half an hour before him.

SALISBURY PLAIN.—At 3 a.m. Lawrence and Watt were taken out for the last of their passenger flights, Jullerot and Tétard giving usual professional exhibition for their edification and instruction. Work was resumed at 5 p.m., lasting until 8.30 p.m., Lawrence and Watt again given long lessons, being allowed to take full control of the levers. Lieut. Cammell, of Air Battalion, flying high on his Blériot; so Jullerot, loth to let him have things all his own way, made high flight on the Bristol.

ISLE OF MAN.—Exhibition flights by Grahame-White on his well-known "American" Farman, on which he flew at many American meetings. These the first flights ever made in Isle of Man.



Mrs. Hewlett, founder and manager of the successful Blondeau-Hewlett School at Brooklands.

Thursday, July 6th.

BROOKLANDS.—Lieut. F. Hetherington, 18th Hussars, took his brevet, on Blondeau-Farman, observed by Johnstone. Has taken up aviation for good of health, being off on sick leave. Looking much better since he started. Waters, on Bristol, sent out alone on machine for first time for rolling practice. Went off down ground, busy watching elevator, found himself 30 feet in the air; began wondering how to get down, pondered the question till near end of aerodrome. No room to put ideas into execution, so turned round and came back; continued debating methods of descent with himself for three complete circuits, and, having come to a decision, shut off his engine and landed quite prettily. Popham, on Bristol, also a novice, up at 200 to 250 feet in good style. Perjusio, on "Henrietta," flying five and ten minutes. Manisty doing straight flights for 15 minutes, and Petre rolling for 15 minutes.

HENDON.—Driver flying early in morning on school Farman. In afternoon Paterson making several flights on "Baby," flying at about 1,500 feet, and once making a large circle in direction of Park Royal. Driver practising right-hand turns in evening.

Type B military Valkyrie out doing a lot of flying in the evening. Two solo flights by Mr. Barber, each about twenty minutes, at heights well over 1,000 feet. Tricky wind registering seventeen miles an hour. Who said Valkyries were not safe in a wind? Following passengers all out on Valkyrie: Wells, Perry, Prentice, C. C. Turner, Lan Davies, and Miss Meeze. Machine now fitted with auxiliary levers for pupil passenger work, which found to be of greatest service in tuition.

VENTNOR.—Thursday given up to passenger and exhibition work. Crowd much impressed by England's high banking in small figures of eight, also *volé planes* with engine cut out. Bad luck in evening. England lent new machine (used for first time when he flew to Eastchurch) to Fleming, as Pizey had had slight mishap on their own, which took a little over an hour to repair. Fleming took passenger with him, but tried to rise too quickly, so that the machine dropped heavily, breaking lower plane. Ventnor people gave aviators very warm reception. Mr. Judd, owner of the Royal Marine Hotel, entertained them. He and Mr. R. Preston, of the Royal Albion Hotel, Brighton, managed the whole thing, and did it very well. Everything was "just so." One knows how seldom that is so in any flying event.

SAUSBURY PLAIN.—Three flights again the start on Thursday. Watt allowed to take charge of machine alone, making two straight flights without making mistakes. Only had first lesson on Tuesday; progress really very good. Lawrence also two straight flights in very good style. Meantime, thick fog sprang up, but Jullerot made cross-country flight over Amesbury and Bulford. Said he was able to find his way with the greatest of ease. Jullerot must have discovered the long-sought "fog piercer."

EASTCHURCH.—After witnessing departure of competitors for Calais, Lieuts. Samson and Longmore set off for Eastchurch, arriving without further event. Lieuts. Gerard and Gregory had their machines out in the evening, flying around Kingsferry, Leydown, and Eastchurch.

LOCALLY.—Procession of unemployed certificated aviators to office of THE AEROPLANE, inquiring concerning paragraph intimating that two firms want pilots for the "Circuit of Britain." Introduction effected between aviators and firms. Results of correspondence, interviews, and trial flights anxiously awaited. Paragraph in question evidently quickly noticed, judging by number of applications received, many from really good fliers.

#### Friday, July 7th.

BROOKLANDS.—Cecil Pashley, of Universal Aviation Company, Ltd., took his brevet on "Birdling" biplane, observed by Johnstone. Waters, on Bristol, flying well for second attempt. Manisty, on "Henrietta," doing straight flights 25 minutes, and Petre making first straight flights for 30 minutes. Fisher out over surrounding country for ten minutes, and when returning Clergét crank case cracked, allowing rear cylinder to blow off. Unlucky "Henrietta." She and Fisher fly beautifully, but no sooner is machine tuned up than either a pupil smashes it or the engine goes wrong.

In afternoon, Gilmour, on nickel-plated Bristol, off to Henley. Flew along course, and opposite Vanderbilt's houseboat came down to surface of water. Dipped in about 18 inches, submerging wheels, and churning the splashed-up water with propeller. Terrific excitement. Strong men, overcome by emotion, compelled to retire for recuperation. Gilmour, imperturbable, landed in adjacent field and watched racing. On way home in evening strong breeze sprang up from east, also Gnome engine went wrong, firing on five cylinders only. Result—25 minutes to cover four miles from Maidenhead in direction of Windsor. Gilmour, bored with looking at same scenery, came down, and left machine for night.

LIVERPOOL.—Fine flight by H. G. Melly, of Waterloo Aviation School. Left Liverpool and flew direct to Manchester and back. Followed Ship Canal and Mersey all the way. Dukinfield-Jones, his pupil, with him as passenger. Outward journey took 40 minutes and homeward journey 63 minutes against wind. And to think that last year there was £1,000 on offer for half the trip.

HENDON.—No. 5 Type B Valkyrie out, now fitted with dual controls for pupils. Lessons to Wells, Perry, and Miss Meeze, and several passenger flights, including one to Gresswell, the well-known Blériot flier. Mr. Barber put up two solo flights, attaining in each case heights over 1,000 feet. Compton-Paterson, with Driver as passenger, flew the "Baby" over to Ranelagh ready for next day's exhibition.

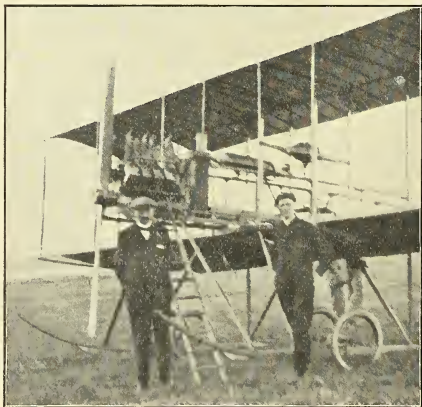
#### Saturday, July 8th.

BROOKLANDS.—Percival, on Billing tractor-biplane (O-P-2-1 type), tried for brevet, but still underpowered. Fine show of pluck and personal skill. Managed to do necessary circuits, dropping badly at corners, but engine expired before he could reach observers. Napier, on Bristol, took brevet, flying at 700 feet, observed by Johnstone. Flight very amusing. Napier, knowing it his last flight—pupils' contracts expiring, as usual, when brevet is won—determined to have value for money. Consequently did his right-hand turns over Weybridge and his left-hand turns over Blythe, miles outside the aerodrome. Popham, also on Bristol, for third time out, doing extraordinary right and left hand turns over top of sheds and sewage farm. Brown, on Blondeau-Farman, practising first straight flights. In afternoon Abbott flying finely on same machine. Watkins out on "Jack Dare's" Howard-Wright E.N.V., and flying very well with and without passengers. Blondeau and Mrs. Hewlett practising. M. Cure, an Antoinette pilot, given a trial on the H-W. E.N.V. as possible "Circuit of Britain" pilot. Controls quite strange, so unable to make much show. Pecquet, who flew a biplane in India, shaped well. Macfie also tried same machine, taking it up at terrifying angle, almost standing on its tail. As Howard-Wright E.N.V. for "Circuit of Britain" will be all-British machine, hope it will have all-British pilot also. Gilmour, having driven out to Windsor to fetch Bristol, flew back late in evening, and treated few remaining people to fine exhibition of fancy flying. Pixton took passenger out to find where Gilmour had come down, but missed him, and only returned after a long cross-country trip.

SHOREHAM.—Fine flight by Morison ended here. Started from Paris 4.40 a.m. Landed at Calais for petrol. Flew to Dover, without any torpedo boats, and came down at Eastbourne. Reached Shoreham in evening. Great enthusiasm. Morison, deservedly, most popular. Altogether a fine feat, signalled particularly by fact that Morison accomplished it without breaking anything. Must almost be a record. Should like to see Morison on really well-built, properly designed machine, for he has makings of a magnificent flier.

Mr. Barber took out Valkyrie school machine, and after doing figure of eight at a height of 500 feet, handed over to Perry, who put in a lot of good practice, doing circles in good style.

RANELAGH.—Exhibition and passenger flights by Grahame-White and Paterson, the latter having supplemented his good



Billing (left) and Percival with the "Billing bus."



flight on previous day by flying the big military Farman 'bus over in the early morning. Paterson certainly one of hardest working of our aviators and an exceptionally fine flier, using his head as well as mere instinct.

#### Sunday, July 9th.

HENDON.—Nothing doing. Aerodrome bolted and barred. Lovely sunny afternoon, but windy. No flying possible, but good many hundreds of people willing to pay the nimble shilling and inspect machines. When no flying going on, surely good policy to let people see machines at close quarters and explain why flying impossible. Entrance shillings would pay expenses, and explanations would convey better impression than impenetrable galvanised iron fence.

BROOKLANDS.—Mr. Brown of New York out for second time in early morning on Blondeau-Farman, shaping very well in straight flights.

#### AIR BATTALION NOTES.

Captain Fulton returned to the Plain on Friday, June 30th, on the expiration of his leave of absence. He had been following the European Circuit as one of the British *Commissaires sportifs*, but, owing to the delays which occurred, his leave ended before the race did. In the evening Captain Fulton and Lieut. Conner were flying on the Bristol, Captain Fulton taking up a passenger.

The weather conditions on Saturday morning were perfect, and Captain Fulton and Lieut. Conner were again out, making flights of ten and twenty minutes. The other Air Battalion officers were away at Eastchurch watching the Gordon-Bennett Race.

Sunday morning was fine, and the Bristol again appeared, and was taken up alternately by these two officers.

On Monday, however, after practising for about an hour and a-half, one cylinder of the engine proved to be missing fire regularly, which caused flying to be discontinued until it could be attended to. Later, on the engine being taken down, the trouble was discovered to be due to a broken cam. In the evening Captains Burke and Massy returned from Eastchurch, and the Farman was brought out to try on being put together after its return from Wallingford in pieces. It had been caught in a storm there and taken down. Captains Burke and Massy did some good flights.

On Tuesday morning these two officers set out for Farnborough, which they reached safely.

Lieut. Cammell returned on Wednesday, and was out on his Blériot in the evening; he flew out to Winchester and back with a passenger to test his compass.

On Thursday a thick mist prevented flying until 5 a.m., when Lieut. Cammell went out for an hour. Lieut. Conner brought out the Howard Wright, and made a couple of straight flights. Later in the day, about twelve o'clock, Captain Fulton made some straight flights on the Howard Wright, and finally expressed himself satisfied with its adjustments. Between seven and nine in the evening Lieut. Cammell was out taking up passengers. Captain Fulton went out for twenty minutes on the Howard Wright, and on his return Lieut. Conner took it out, but a burst tyre stopped work with it.

On Friday morning Lieut. Cammell made a couple of flights of twenty minutes each, practising dropping despatches while in the air.

#### LANARK FLYING.

Mr. H. O. Walsh writes: "There has been no flying this week by Mr. Even, the principal of the school, but the pupils are still making good progress. It is interesting to note that aviation is making favourable progress in Scotland, three persons having signified their intention of joining the school during the past week."

#### WORK AT BECCLES.

There has been no flying during the week owing to various alterations being made in the propeller drive.

Hard work in the shed instead. Temperature decidedly on the warm side, almost sufficiently hot to warrant the suggestion that brazing could be done *ad naturam* without the aid of a blow lamp.

Various cross-country flights in prospect being discussed, and surrounding country reconnoitred for landing places.

Local enthusiasm at high tension, and interest very keen. By way of being in the "swim," there is a sewage farm in

the vicinity of the flying ground. Evidently aerodromes and sewage farms go hand in hand, perhaps on the "smooth-sea-never-made-a-good-sailor" principle. D. M. H.

#### NOTES FROM GERMANY.

Mr. E. W. Colver, writing last week from Schramberg, in Württemberg, says:—

I am delighted to see the appearance of your interesting paper.

Two interesting monoplanes, which I saw when last in Berlin, were the "Erich" and "Harlan" machines. There were five "Erich" machines at the aerodrome in Johannistal-Berlin, which were fitted with a variety of motors. Hirth uses a Mercedes-Daimler, but the Gnome is also fitted. I have just heard that Hirth, who is a native of Schramberg, has won the prize for the flight from Munich to Berlin with a passenger.

The "Erich" is quite the prettiest and most stable flier that I have seen. The "Harlan" machine has been doing some very good work, and is strongly and well made, with many novel features of construction. A curious machine there was the single-propellered Wright with a Farman type landing chassis, which is being flown by Engelhardt.

Flying is being pursued with great energy in Germany, and the "airship" is being slowly but surely discarded. The large Siemens-Schuckert semi-rigid airship is to be scrapped after a life of only a few months, as they find that the envelope cannot stand the strain of fast travelling.

I have received some particulars of the Munich-Berlin race, and also of the new Zeppelin airship "Schwaben."

Hirth, on his Erich-Rumpler machine, started with the well-known aeronaut Herr Dierlamm as passenger for the Kathrein-erprise of 50,000 marks at seven o'clock on Thursday evening, and arrived without trouble in the city of Nürnberg at 8.30, the distance being 145 kms. Next morning they left at 4.30 for Leipzig. This stage was not only the longest, but by far the most dangerous, as they had to cross both the Fichtel Mountains and the Mittel Mountains. Travelling at an average height of 500 metres and 800 metres over the mountains, they arrived in Leipzig at seven o'clock, having passed Weissenfels at 6.35, taking 2 hrs. 23 mins. to do the 235 kms. from Nürnberg to Leipzig. Leaving Leipzig again at 7.40, they arrived without mishap and quite unexpected at 9.8 in Johannistal-Berlin. The total distance is 539 kms., for which they only took 5 hrs. 30 mins. The motor used was a Mercedes-Daimler.

The latest passenger airship of the Zeppelin type is the "Schwaben," which made its trial flight on Saturday, June 24th. It is 140 metres long, with a diameter of 14 metres, and a capacity of 18,000 cubic metres. As in the others, the framework is divided into seventeen parts, each containing a balloonette. There are two cars containing the motors, with the passenger cabin between. In the front car is a single 145-h.p. motor, which drives two two-bladed propellers at 500 revolutions a minute; the steering wheel, and the ballast and valve controls. In the back car are two 145-h.p. motors, each of which drives a four-bladed propeller at 500 revolutions. All the controls are double, and are worked from the front car. The calculated speed of the airship is 16.5 metres per second (40 m.p.h.). The lift is 21 tons, with a useful lift of 5 tons.

#### Good Resolutions.

At the meeting of the Committee of the Royal Aero Club on July 4th the following resolutions were unanimously passed:—

(a) That the best thanks of the Royal Aero Club be accorded to Mr. Alec Ogilvie for his services as representative of Great Britain in the contest for the Gordon-Bennett Aviation Cup.

It is of interest to note that Mr. Alec Ogilvie is the only aviator who has, on two occasions, completed the entire course in contests for the Gordon-Bennett Aviation Cup. As already noted, Mr. Ogilvie used an N.E.C. two-stroke engine of all-British construction.

(b) That the Royal Aero Club, in thanking Mr. Gustav Hamel for representing Great Britain in the contest for the Gordon-Bennett Aviation Cup, desires to sympathise with him in the unfortunate accident which robbed him of his chances in that event, and, further, expresses its gratification at learning that the injury sustained has not proved serious.

Mr. Hamel was brought up to his home at Kingston on the Monday after his accident; and on Wednesday THE AEROPLANE had the extreme pleasure of hearing from his mother by telephone that he was feeling quite well, but his doctors ordered a complete rest for a few days more. On Monday last he called at 166, Fleet-street, and announced that he was going to fly at Birmingham yesterday (Wednesday).



### Verrept's Revenge.

Verrept, who has hitherto had to act as sort of "second horseman" to Védérine, handing over his machine to the latter in the Paris-Rome and "European Circuit," had a mild revenge and justified his existence on July 7th, when he beat all the Belgian records for distance and height, putting Oliesläger's distance from 219½ kms. up to 338½ kms. (the first 100 kms. in 1 hr. 15 mins.), and the Belgian height record up to 1,030 metres. Still they are not as good as the British records even now.

### New "Aviatrices."

The little Caudron biplane has recently enabled a new aviatrice, a Mme. Drianourt, to get her brevet; and the Hanriot school has also a feminine flier, of Javanese-Dutch extraction, who shapes decidedly well on a machine, even if she cannot yet fly much. Several British aviators following the "Circuit" formed quite a high opinion of her.

### Our Newest Pilots.

The following is a list of the latest pilots' certificates granted by the Royal Aero Club:—June 20th: Capt. F. H. Sykes. June 27th: G. Higginbotham, Herbert Stanley Adams, Lieut. J. W. Pepper, R.A., Henry Salmel (subject to sanction Aero Club of France). July 4th: Charles Gordon Bell, Charles Reginald Abbott, William Miller Hilliard (subject to sanction of the Aero Club of America), William Darnley Johnstone.

### An Anglo-French Certificate.

Lieut. Porte, R.N., who last year carried out some experiments at Portsmouth with a biplane of his own construction, succeeded on July 5th in passing for his brevet on a Deperdussin with a 3-cylinder Anzani engine. It is said that he intends to fly a Deperdussin in the "Circuit of Britain."

### A Speedometer Wanted.

A firm of constructors, who are experimenting with a very interesting machine, will be glad to hear from any firm of instrument makers who can supply a really accurate air speedometer. That is to say, an anemometer which can be easily fixed to a machine to indicate the speed at which the machine is travelling through the air. There is quite a large demand for instruments of this kind, and THE AEROPLANE can put manufacturers in touch with a number of likely buyers.

### The First Biplane to reach England.

It is worthy of note that Tabuteau, on his Bristol biplane, was, in spite of all his bad luck in the earlier stages of the tour, the first pilot of a biplane in the "European Circuit" to arrive at Dover from France, and was also the first biplane pilot to arrive at Hendon, so that after all British workmanship has justified itself in competition against Continental work. Tabuteau's machine is certainly one of the fastest biplanes of the front elevator type ever turned out.

### New-type Bristol Machines.

The British and Colonial Aeroplane Co. have, as was to be expected, appreciated the advantages of steel construction, especially for firms whose resources permit of laying down the necessary plant.

The Bristol entries for the *Daily Mail* competition are to be four biplanes and four monoplanes, of which latter at least one is of steel. This machine is expected to be ready this week.

### Another "Bristol" for the "Circuit."

It is interesting to note that James Radley, having smashed his Antoinette, has ordered a military type biplane from the British and Colonial Aeroplane Company, and so the Bristols will have another first-class pilot and another machine in the "Circuit of Britain." The energy which Sir George White and his firm are putting into their efforts to place British-built machines in the forefront is to be greatly admired.

### To "Circuit Chasers."

All who have to follow the "Circuit of Britain" either as officials, or with cars loaded with spares, will appreciate the necessity for reliability in tyres. Cars overloaded with aeroplane and engine parts, and with mechanics stowed all over them are particularly liable to tyre trouble. A useful safeguard is the Atlas Tyre Jacket, for the writer can vouch for the fact that a cover can be run to the last shred if there is an "Atlas" inside it. The *Daily Mail* uses them on all its news vans; so does the *Evening News*.

### A New World's Height Record.

On July 10th, on a Farman racing biplane, Loridan broke the world's record for altitude, held by M. Legagneux with a 2,200 metres. According to his barometer, which has been handed over to the French Aero Club for verification, he reached an altitude of 3,280 metres (10,758 feet) after climbing in 1 hr. 23m.; his descent took 12 minutes.

Hirth, the German aviator, made a new world's record for height with a passenger at Johannisthal on June 6th by flying to a height of 1,580 metres. The previous official record was 800 metres by Brunhuber, and the unofficial record was 1,465 metres by Eugène Renaux when he landed on the Puy-de-Dôme.

### A South Wales Meeting.

Mr. Mario Arioli, who has for a year or so done excellent work in the Cardiff district in stirring up interest in aviation, writes that there is some prospect of South Wales seeing some really good flying this autumn. It was thought at first that the local motor clubs might take a hand in organising a meeting, but as the clubs did not wish to run the risk of financial failure, that scheme fell through. It is now quite likely that the *South Wales Daily News*, which is the most important paper in Wales, may support the scheme by starting a public subscription for expenses, and playing a handsome part in the organisation itself. It is also probable that at the time of the proposed meeting a handsome prize will be put up for a flight on a British-built aeroplane from Cardiff to Weston-super-Mare and back. Such a flight should be of very great interest, for it would appeal not only to South Wales, but to the big holiday-making district along the coast west of Bristol, and no doubt the immense local patriotism of the Bristolians, which has been stirred up by the British and Colonial Company, would ensure quite considerable support on the Bristol side of the Channel. THE AEROPLANE wishes the enterprise every possible success.

### North Wales Awakening.

Mr. John Hall, of Colwyn Bay, writes to THE AEROPLANE that a flying meeting is to be held there from the 15th to the 20th of this month. Two sheds are already nearly complete, and among the aviators engaged are, it is understood, Mr. R. A. King, of Freshfield. The date seems rather unfortunate, as, of course, it clashes with the "Circuit of Britain," when many of the best aviators will be engaged, if not as competitors, at any rate in following the Circuit in one capacity or another, but Mr. King has proved his ability, so one good flier is, at least, assured.

### Irish Encouragement.

There is a probability that another aviation meeting will be held in Ireland this autumn on a much bigger scale than that at Leopardstown last year. Endeavours are being made to arrange for an exhibition of flying near Belfast for one week-end, and another the following week-end near Dublin, and if possible a really handsome prize will be put up for the best flight of the exhibition fliers from Belfast to Dublin. THE AEROPLANE is given to understand that the moving spirit on this occasion, as on the last, is Mr. J. C. Percival, P., who, with that well-known sportsman, Mr. R. J. McCreedy, is proprietor of *The Irish Cystidist* and *The Motor News*, two of the most readable papers ever turned out in connection with mechanically aided sport. When "Jim" Percy takes hold of an idea of this kind it generally has to be a success, and it is to be hoped that his record of success will be maintained on this occasion.

### An Army Aeroplane Trophy.

It is announced that, with the approval of the Army Council, the Manor House Club, Bredons Norton, Worcestershire, offers a challenge trophy to the aviator who does the best time flying to the Manor House Club, Bredons Norton, from either Brooklands, Hendon, Salisbury, or Aldershot. The competitors must be officers on the active service list. They may choose any day to fly in July, August, or September, and they may come to ground once *en route*. One would like to know how much time allowance is to be given to Aldershot for the extra distance, as against Hendon, or even Brooklands. Also whether a prize goes with the challenge trophy to make it worth the risk of flying over the Malverns and the rough country in Worcestershire.

### The Gas-Bag Again.

On Friday and Saturday last the *Clément-Bayard IV.*, carefully choosing the calm of the night for its trial, managed to stay in the air for 16 hours, voyaging round and round the country between Soissons and Compiègne. In the 16 hours it covered 650 kilometres, or about as much as a fairly fast aeroplane would cover in  $6\frac{1}{2}$  hours, including half an hour for lunch. And yet some countries, including ours, regard these things as of possible use in war. As pleasure vehicles they may be amusing and interesting, but for war—No!

### Liverpool Model Aero Club.

Meeting on Friday was a complete success. Discussion of rules and prospects was very keen, and with enthusiasm to keep the club alive, the Secretary thinks the club will have a great future. Club is renting private field situated centrally, so that members will be able to experiment without the general public looking on and passing their usual kind remarks.

Further meeting to be held on Friday, July 14th, when hope to have much larger attendance. Subscription only 1s. per month and no entrance fee, so worth enthusiast's time to walk or ride to the club and plank down his money.

Flying meeting has been arranged for Saturday next, 15th inst., given decent weather. Club would be pleased to receive catalogues of model accessories. Prospective members are asked to communicate with Alex. Grindrod Pugh, Secretary, 39, Brook Road, Bootle.

### Coventry Aeroplane Building Society.

Above Society had a "flying golf" competition on July 1st. Winner was Mr. M. Rolfe's monoplane, which did some very good flights, although wind was very high and gusty, showing that models can be steered against a strong wind. Second prize fell to Mr. L. Ryley. Half-yearly General Meeting will be held in Mayor's Parlour Coffee Tavern, Broadgate, on Wednesday, July 19th, at 8 p.m. Will members please bear in mind that designs for contemplated club glider must be sent in by first week in August? It is hoped during autumn and winter months to arrange discussion, and lectures on the various phases of aviation.—J. W. Schofield, Hon. Secretary.

### Aero-Models Association.

The South-Eastern Branch will hold an open model-flying competition on the golf links, Mitcham Common, on Saturday, July 29th, at 3 p.m. There will be three events: (a) Models rising from ground; (b) Duration; (c) Distance. Entry fees, members 6d., non-members 1s, for each model. Entry forms must be returned not later than July 28th to Mr. W. F. Ransley, Hon. Secretary, S.E. Branch, 9, Aspinall Road, Brockley, S.E.

### International Model Competition.

The Royal Aero Club have granted the Kite and Model Aeroplane Society the necessary permission to hold an International Model Competition in this country. The rules and details of this competition will be published as soon as possible, but some time must elapse before the date, etc., can be fixed. A special fund for prizes for this competition has been opened, and Mr. Akehurst will be most pleased to receive donations towards this.

### The Scottish Aeronautical Society Model Aero Club.

This Club gave a demonstration of model flying at Rutherglen on Saturday, 8th inst. Duration flights of thirty-five to forty seconds, and distance of 250 to 300 yards, were obtained by several of the members.

### More Opinions.

Miss Gertrude Bacon (the well-known writer): My very heartiest congratulations on the cleverest, raciest, brightest, and best of current weeklies (on any subject)."

D. Graham-Gilmour (Certificated Aviator).—"I think THE AEROPLANE will be a great success—anyway, amongst aviators and those who know something about practical aviation. It is the paper I look forward to more than any other each week—is it not more interesting than the others?"

Captain H. G. Sanders (Beccles): "I must congratulate you on the fearless manner in which you deal with matters of importance in THE AEROPLANE."

C. Phillips Vierke, Esq. (Paris): "Hearty congratulations on THE AEROPLANE. It is just the thing needed to wake up England. Every line worth reading and studying. I wish you heaps of luck."

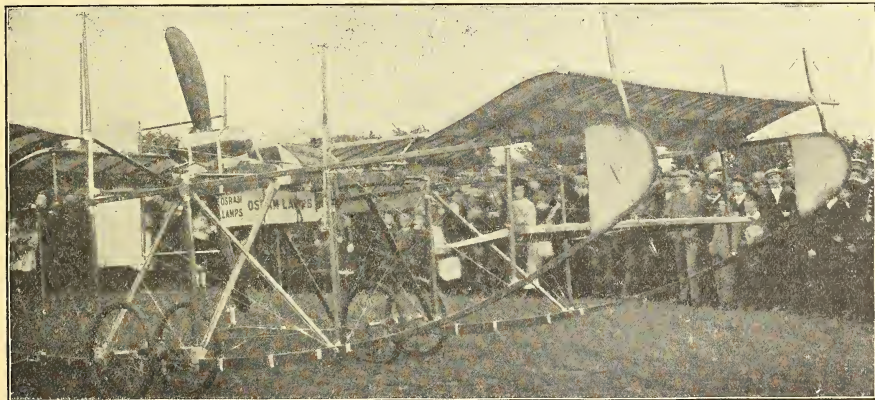
J. W. Schofield, Esq. (Hon. Secretary the Coventry Aeroplane Building Society): "Very glad indeed at the advent of your bright and well-arranged paper, which will, I venture to think, fill a long-felt want. Wish you every success."

G. A. Watts, Esq. (Pfeil and Co.): "I like the style and tone of your paper, it seems to be always bright and fresh. I should not like to miss even one week."

H. Miell, Esq.: "Hearty congratulations on your interesting journal."

R. Blackburn, Esq. (the Blackburn Aeroplane Co.): "I may state that I not only find THE AEROPLANE is clearly in touch with all aviation matters, but also very interesting and enlightened from a technical point of view, and I shall always look forward to reading its contents with interest."

John Browning, Esq. (Cheltenham): "I would take in THE AEROPLANE if the price was 1s. a number."



A GENERAL UTILITY VEHICLE:—Mr. Barber's Passenger-carrying, Delivery Van, Racing Valkyrie.



## Correspondence.

The Editor of THE AEROPANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPANE, 166, Piccadilly, W.

### The Dangers of Banking.

SIR,—Your correspondent, G. Alan Hill Reid, appears to be more or less under the impression that "banking" is executed merely for the sake of appearance, and to make what would otherwise be a very ordinary flight a trifle more spectacular. Has Mr. Reid ever seen a fast machine turn without banking? I have, and for downright clumsiness the spectacle is unbeaten.

If flying consisted of merely controlling elevation matters would be rendered much simpler than they are, but unfortunately it is necessary to exercise a control on the direction of the machine, and to do this neatly and quickly it is practically essential to use the rudder in conjunction with the warping gear. We may compare the manoeuvring properties of, for instance, the old type of Voisin and the Wright.

It is fairly obvious that if a machine is flying at a rapid rate in a certain direction, and the rudder is suddenly put over, the head of the machine will come round in obedience to the rudder, but the general tendency to continue in the same direction as it had been flying would be so great that the machine would make a gigantic aerial sideslip, which in a speed competition, where fifths of a second make a difference, might be a trifle awkward.

By banking the machine prior to a turn a firm bolster of air is formed under the raised plane, which serves as a *point d'appui*, and prevents the sideslip in the ensuing turn. It may be overdone somewhat by certain aerial acrobats, but, nevertheless, used in moderation, it is extremely useful, if not absolutely necessary.

To change the subject, I should like to ask the Editor where and when he saw a Blériot monoplane, Type 11, in which the elevator and ailerons were combined as is mentioned in a copy of *Flying: The Why and Wherefore*. I never saw the actual Blériot XI, but in all printed records, both English and French, I find it distinctly stated that lateral stability was maintained by warping the wings, the warp being actuated by a little rigger lever attached to a V-shaped tubular construction below the pilot's seat.

I have seen a pretty considerable number of these machines, but in each case the warping was effected by the method I have described, and not from the cabane, as is mentioned in the book.

In conclusion, I should like to express my thanks for the elucidation on various points that I received from reading that little booklet.

MILL HILL.

"PLANETORQUE."

[Presumably "Planetorque" refers to the statement in *Flying*, on page 48 of the early editions, that in the later Blériot monoplanes a similar (i.e., stabilising) effect is produced by having adjustable tips to the wings, the tip of the inside wing being tilted upwards by a rod which runs thwartwise through the centre of it." This device has long since been given up by Blériot in favour of warping, but has lately been revived by Pivot on his very successful monoplane, in which no wires are used.—Ed.]

### The Hazards of Aviation Meetings.

SIR,—You have earned the deepest gratitude of those who have the cause of aviation well at heart by your mastery and outspoken leader on this subject. Many have inclined to your opinions, but you alone have dared to express them. In the last two aviation meetings aviators were obviously tempted to commit suicide. It is, of course, the competitive events that are so dangerous.

The year 1910 will long be remembered for the triumphs which were achieved in Aviation, as well as for the many appalling disasters which accompanied and overshadowed the triumphs. For the obvious reflection must ever be before us that the disasters were not inevitable; but were due, in almost every instance, to avoidable accidents.

They happened from faults of construction, weakness of materials, hastily made imperfect repairs, and unsuitable landing places; not from inexperience of the aviators, for the

greater number of them were in the front rank of fliers, and we shall look in vain for men of equal skill and daring to replace them.

The main cause of these truly irreparable losses is the holding of aviation meetings. The flights undertaken in such circumscribed times and spaces are hazardous to the spectators and deadly to the performers. Men are tempted, both for honour and gain, to fly in unfit places and strong winds, over treacherous ground, on which they are compelled to alight or lose the prize for which they are competing.

The skill of the men is greatly advanced beyond the machines, and they are tempted to trust what is untrustworthy. Instability is the principal fault of the machines.

Aeroplanes are apt to overbalance, either by pitching head foremost or by heeling over horizontally; in such cases they fall like a dead weight to the ground, because they present no horizontal plane surface to support them to the air. The machines should be provided with clinometers to show the aviator the dip and heel at any moment, lest he should allow them approach an unsafe angle unknowingly.

What is now required is a series of careful experiments with a view to perfect the machines on the various points in which they are known to be weak or unreliable.

It is a mistake to decry flying as necessarily dangerous: it is probably a safer sport than fast motoring, steeplechasing, or even hunting, to those who attempt to follow the hounds; but it should be practised at present in open spaces over clear, even ground to land on, and in suitable weather to be safe.

Cheltenham.

JOHN BROWNING.

[Mr. Browning was a collaborator with the great Wenham, and his opinions are well worth bearing in mind by those who merely indulge in trick flying and do not experiment seriously.—Ed.]

### Insect Fliers.

SIR,—Your Editorial note at the end of Mr. Manning's article is very appropriate, for one fears that the "limitations" will hardly permit of all the developments he anticipates. Everyone must be aware of the enormous expense connected with aviation at the present time, which can only be maintained by unlimited means or the winning of large money prizes.

No private aviator, unless he were a millionaire, could afford to smash a chassis at every landing or to keep two or three mechanics rushing after him in motor-cars or a special train. Nor can we care to tip a dozen men to hold a machine until he gets started. It is doubtful if even the Post Office would be willing to incur these incidental expenses, and to pay for damage to buildings and agricultural property. The arrangements which Mr. Manning proposes may be possible when we have a machine which will jump off the ground like a bird and alight as gently as a bird, wherever and whenever the aviator chooses. But it is to be feared that this machine is still a vague chimera in the brain of its inventor.

It was during my quest for such a machine that I stumbled across the principle on which it seems to me that the French monoplane flies, and I may now explain, with your permission, how I came to make this discovery. It had occurred to me that if the dictum of the Brothers Wright were true, that the pressure of the air is upwards, then it would be easier to throw the air up than to throw it down. From this I inferred that a machine might be made to fly by means of paddle wheels revolving in the opposite direction to those of a steamboat.

I therefore constructed a wheel exactly like the water wheels of my childhood's days, that is, with four broad blades at right angles, which, I suppose, would be called a pitch of 90 degrees. This I caused to rotate rapidly by means of indiarubber, and held up my handkerchief before, behind, above, and below, to ascertain if there was any difference in the blow-out of the air in these directions. I could discover very little blow-out at all, but on holding up the handkerchief at the side, out of mere curiosity, it was instantly drawn into the wheel by a powerful draught. I was dumbfounded, because of course the wheel drew in at both sides, and it seemed to me that it actually consumed the air.

But of course, as the blow-out was all round, and the indraught only at the sides, the former was much less perceptible than the latter. Then I saw that if I blocked up the one side of the wheel it would draw in at the other, and if free to move would proceed in that direction. I started to utilise the idea, but a little reflection showed me that the Frenchmen had been before me, and their tractor had the



# Nieuport Monoplanes.

**GORDON - BENNETT  
CUP, 1911.**

**1st.** Weymann on a Nieuport.  
**3rd.** Nieuport on a Nieuport.

GENERAL AGENT FOR THE BRITISH EMPIRE:

**MAURICE DUCROCQ,**  
Brooklands Aerodrome,  
Weybridge, Surrey.

## ... THE ... Beney Propeller.

SIZES FOR STANDARD  
MACHINES KEPT IN STOCK.

*Particulars and Prices from—*

**ROBERT BENEY & CO.,**

7, CARLISLE STREET, W.

EVERYTHING HALVED  
BUT EFFICIENCY.

The initial outlay and running expenses are cut  
in halves by the

**AVRO BIPLANE**

Complete with 30 h.p. Green, £600

Cheaper than any other successful machine.

**SMALL AND COMPACT.**

Two or three Avros can be housed in a shed  
which will only hold one ordinary biplane.

**A. V. ROE & CO.,**

The Aviator's Storehouse, Brownsfield Mills,  
**MANCHESTER.**

**1  
2**

# THE NEW TYPE B VALKYRIE MONOPLANE

HAS NOW BEEN TESTED AND HAS  
PROVED AN UNQUALIFIED SUCCESS

**Especially designed for Military Service.**

THREE TYPES: 40-80 miles an hour.  
From £280.

ALL THREE TYPES FLYING DAILY AT HENDON.  
*Tuition Free to Purchasers. Particulars on request.*

## THE AERONAUTICAL SYNDICATE

Established March, 1909. LTD.,

At the Flying Ground, Collindale Avenue,  
West Hendon, N.W. (<sup>6 miles from the</sup> West End)

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## Clift Aero Maps

*For Daily Mail*

### "CIRCUIT OF BRITAIN"

and all Cross-country flights. **Clift Maps**  
were used by Vidart, Kimmerling,  
Valentine and others in the European  
Circuit.

## CLIFT AERO COMPASSES

The compass certified to be the best  
by Latham, Valentine, Pizey, Fleming,  
Barber, and other experienced aviators.

Necessities for the

### "CIRCUIT of ANYWHERE"

*For terms, write—*

**Eric Clift, c/o "The Aeroplane," 166, Piccadilly, W.**

advantage of cutting into the air, as well as dispersing it and making a partial vacuum, as an insect does with its wings. But, as I pointed out in my last contribution, I think this principle might be more fully taken advantage of.—A. ALLAN.

[An alternative Mr. Allan might try standing in a clothes basket and lifting himself by the handles.—ED.]

#### Where were our Reserves?

SIR,—Can you or one of your readers tell me the reason why only two of the British representatives attempted last Saturday's race? Although three representatives and three reserves had been nominated, nobody but Hamel and Ogilvie flew for us; the former was unfortunately put out of the running soon after the start, while the latter was using a machine which was admitted to be slower than any other one competing by a matter of nearly thirty miles an hour! A daily paper stated that Mr. Gilmour thought "he had no chance"; surely he might have tried to complete the course on his British-built machine, and thus he and Mr. Ogilvie might have gained us fourth and fifth places, which is no mean achievement in the face of some countries not entering at all, but still this is over and done with.

Of the English reserves, only one, I hear, was in England at the time of the race, and his machine was not at Eastchurch!

Finally, may I add that I heartily agree with your correspondent "Planetroque" as to eliminating trials, and think that at least one reserve should be in readiness in a race like the Gordon-Bennett, which is a race in which good management goes a long way.

West Kensington. J. S. H. JAMES.  
[Mr. James will have found some enlightenment in the review of the Gordon-Bennett race last week, but his letter shows how the average man who is interested in aviation regards the matter, and an official explanation by the Royal Aero Club of the poor show England made would be welcome.—ED.]

#### Those Eliminary Trials.

SIR,—I quite agree with the remarks of "Planetroque" or the Gordon-Bennett Race in your issue of June 29th. Where were the eliminating trials?

What on earth caused the R.Ae.C. to nominate a man who was going to fly an absolutely untested machine, a machine that was not even finished? It was simply courting defeat.

I have nothing to say about Mr. Gilmour personally, and I think they could not have made a better choice if he had been flying a well-tested machine.

Then, again, where were our reserves? How is it there was no one with a machine ready to start in event of something happening—as it did?

Why did not the R.Ae.C. make sure of the reserves being ready before it nominated them? I am afraid somebody made a large blunder over the whole business.

I also second "Planetroque's" remarks about the Hendon demonstration. Who was responsible for prohibiting all machines from flying till the evening, with the exception of the Blériot and Grahame-White machines? To say the least of it, it was not a sporting thing to do; it almost seems as if they were afraid of rival makers' machines flying while the more notable people were there. [The flying was arranged by the "Parliamentary Committee of Aerial Defence," and not by M. Blériot or Mr. Grahame-White, which makes the happenings still more extraordinary.—ED.] I have said some hard words, but I think they are justified by the events which caused them.

Old Trafford.

"SKY PILOT."

#### The Gordon-Bennett Race.

SIR,—Re the "Gordon-Bennett." I had been waiting for THE AEROPLANE to get a true account of the above race before criticising the performance of our men, but now I have got the truth I can speak with impunity. The newspapers (by the way, I do not attach much importance to these) stated that after poor Hamel's accident "England's one hope had gone." Now why should that be so? We were represented by three fliers, with the same number of reserves, and when the first smashes his machine our hope is gone! Where were the others?

It is true Ogilvie completed the course—and all honour is due to him, but why was he entered at all? Not to prove that he could fly, for it is known that he is one of England's best;

he could do the 94 miles every morning before breakfast if he so wished, but to think that he could win the speed prize of the year is nothing short of absurd, especially against France's crack machines and fliers.

Again, it seems equally absurd to enter a pilot who does not know the day before which machine he will fly. Our three reserves had not machines to fly on without borrowing, and Hamel had to represent England on a machine which was to him entirely new. Where was our chance?

This is a state of affairs which speaks but little for the selection, but the excuse may be that the "European Circuit" hampered the arrangements. Why did not someone pay a visit to Mr. Barber and order a "Valkyrie" racer fitted with 100-h.p. E.N.V. or other English engine, instead of trusting to foreigners? Someone should undoubtedly have represented our own country on an "All-British" machine, and it certainly must be admitted that the machine built to above specification would have at least stood a better chance than Ogilvie's "Wright." What a victory if it carried off the trophy. An "All-British" victory.  
Silvertown.

ERNEST A. SISSONS.

#### More "Intrepid Airmen."

SIR,—I read with much interest the letter from Mr. McGregor in your last issue. But aviators do wonderful things elsewhere. Here is a description of the arrival of a Bristol biplane at Ventnor, Isle of Wight. I have cut it from the *Island Star*: "The biplane made a direct passage over the town, and on straight to the flying ground, on arrival over which one of the occupants could be distinctly seen *walking along the platform of the machine*. The biplane made several circles of the ground, and went a distance out to sea, eventually planning down, and coming to earth with as pretty a bird-like motion as could be imagined. The scene that followed cannot be described in words." Yours, etc.,

Sandown, Isle of Wight. "NOT AN EYE-WITNESS."  
[The italics are not in the original, but either Pizey or Fleming deserve them.—ED.]

#### The Latest Propeller.

SIR,—The following specimen of feminine knowledge is guaranteed true:—

Boy: "Did you see those aeroplanes pass over here?"

Old Lady: "Yes, but they weren't the same as the ones which came on Monday; I distinctly saw *flags* flying on them."

Boy (rude boy, I fear): "I am quite sure you didn't."

Old Lady: "Yes, I did; you see they must have *something* to make a draught!"

Canterbury. "AN ENTHUSIAST."

#### The Clift Compass.

SIR,—I have received a letter from Mr. Clift, whose make of compass I used during my flight the other day from Shoreham to Hendon, and he has asked me to state that I did not lose my way owing to any defect in the compass.

I am unable to state definitely the reason for its leading me astray, but in justice to Mr. Clift I will say that, in my opinion, the error most probably arose from my having made some mistakes in adjusting the course before starting.

I consider Mr. Clift's compass, and also his maps, to be far the best yet designed for aerial navigation. I shall continue to use them with confidence, and I think that considerable credit is due to Mr. Clift for his excellent work, which is proving of invaluable service to aviators. I shall be obliged if you will publish this letter as it is so easy for a wrong impression to become current.  
Hendon.

H. BARBER.

#### A Manchester Aerodrome.

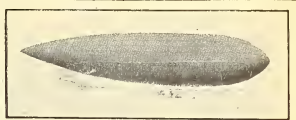
An aerodrome has just been started at Manchester. The site is quite a suitable one, and is situated in Trafford Park, about five minutes from Trafford Park Hotel, to which there is a tramcar service. The area of the ground is about 91 acres, and it is rapidly being cleared and prepared for flying. The ground has been selected as the official alighting place for the competitors in the *Daily Mail* prize competition. The directors are prepared to let spaces on the ground for the purpose of erecting hangars to any aviators who wish to use the aerodrome, and possible tenants are requested to communicate with the secretary, Mr. F. Akenhead, 22, Booth Street, Manchester.

# T. WILLOWS LTD.

## ERONAUTICAL ENGINEERS

### SPECIALITY: WILLOWS' DIRIGIBLES

32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



**"CIRCUIT OF BRITAIN."**—100 H.P. 6 Cylinder Car for sale. Just overhauled. Fine condition. Can beat 90 miles an hour. Just the thing for Royal Aero Club Officials, Aviators, Assistants, Volunteer Ambulance Corps and other "Circuit Chasers." Apply Box 322, THE AEROPLANE.

**50** H.P. ALVASTON for sale, perfect condition, fresh from makers; replacing by more powerful type; price £95.—MALLOWS & CO., ADELPHI HOUSE, 71/72, STRAND, LONDON, W.C.

**A** RESPONSIBLE position is vacant in an old-established firm of Aeronautical Engineers with flying grounds, machines, and several valuable patents. Salary, £200 to £300 per annum, according to investment. Strictest investigations. Solicitor's or Banker's reference required.—Write MALLOWS & CO., ADELPHI HOUSE, STRAND, W.C.

**35** H.P. GREEN AERIAL MOTOR, latest make, new, identical with 24-hour non-stop engine, price £200. Fitted in Dirigible, or Aeroplane, £500 complete.—C. G. SPENCER & SONS, 56a, Highbury Grove, London, N.

**A**EROPLANE CLOTH. Spencer's Balloon Fabric. Best and Cheapest. Width 44 inches. Length 60 yards per piece. Price 1/- per yard Unproofed. 1/6 per yard Waterproofed. Delivery from Stock. Used on many well-known Machines.—C. G. SPENCER & SONS, 56a, Highbury Grove, London, N.

**M**ANAGER wanted for aeronautical works in Midlands, making parts for models and full-sized machines. Good possibilities for young energetic man. Apply Box 323, c/o THE AEROPLANE.

**L**ANARK AERODROME, Lanark, N.B.—Tuition by Certified Aviator on genuine Blériot Monoplanes; Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION CO., 185, HOPE STREET GLASGOW, OR BARRHEAD.

**P**ROPELLERS.—"Avro" Propellers of proved efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines.—A. V. ROE & CO., BROWNSFIELD MILLS, MANCHESTER.

**M**ACHINES.—"Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & CO., BROWNSFIELD MILLS, MANCHESTER.

**T**UITION.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly See news columns.—A. V. ROE & CO., BROWNSFIELD MILLS, MANCHESTER.

**W**ANTED, immediately, volunteer assistance to help experiment with aero-hydroplane on South Coast. Apply PIFFARD, Lifeboat House, Shoreham Beach.

**B**LERIOT cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

### Coming Events.

#### AEROPLANE COMPETITIONS.

- July 22.—Start of Daily Mail "Circuit of Britain" from Brooklands.  
 „ 24.—Circuit of Britain leaves Hendon.  
 Aug. 5.—Finish of "Circuit of Britain."  
 „ 5-21.—Circuit of Belgium.  
 Sept. —.—Paris-Bordeaux-Paris.  
 Oct. —.—French Military Competition (1,200,000 fr.).  
 „ 31.—Last day for British Michelin Cup Flights.  
 Dec. 8-25.—Paris Aero Show.

#### MODEL COMPETITIONS.

- July 14.—Liverpool Model Aero Club. Meeting 8 p.m., 39, Brook Road, Bootle.  
 „ 15.—Liverpool Model Aero Club Flying Competition.  
 „ 19.—Coventry Aeroplane Building Society. Half-yearly general meeting, "Mayor's Parlour," 8 p.m.  
 Aug. 12.—Kite and Model-Aeroplane Association Gamage Cup.  
 „ 20.—Kite and Model-Aeroplane Association Self-Launching Models, North Ealing.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address AERLEON, London.

Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
	s.	d.			s.	d.	
3 months, post free	1	8		3 months, post free	2	9	
6 " " "	3	3		6 " " "	5	6	
12 " " "	6	6		12 " " "	11	0	

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

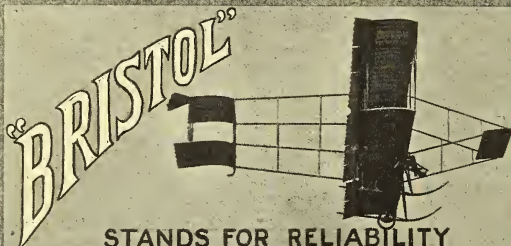
1<sup>st</sup>  
WEEKLY

Vol. I.]

THURSDAY, JULY 13th, 1911

No. 6.

Going Strong.



STANDS FOR RELIABILITY  
AND  
STRENGTH.

THE GREAT POINT  
about the  
"BRISTOL" BIPLANE  
in the  
European Circuit  
is that

The same machine was used throughout the race.

Compare this with the records of the other Machines,  
and agree with us when we say that

"BRISTOL" stands for  
Reliability and Strength.

The . . .  
"Bristol"  
Flying  
Schools  
are at  
SALISBURY  
PLAIN AND  
BROOKLANDS.

THEY ARE EQUIPPED WITH

"Bristol"  
Biplanes  
Fitted with  
"Gnome"  
Engines.

Expert Tuition  
ensuring  
Rapid Proficiency.

Special terms to Navy  
and Army Officers.

THE BRITISH & COLONIAL AEROPLANE CO. LTD.

TELEGRAMS  
"Aviation" Bristol

BRISTOL ENGLAND

TELEPHONES No 2 P.O.  
74 } National  
3074 }

"THE AEROPLANE," JULY 20, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

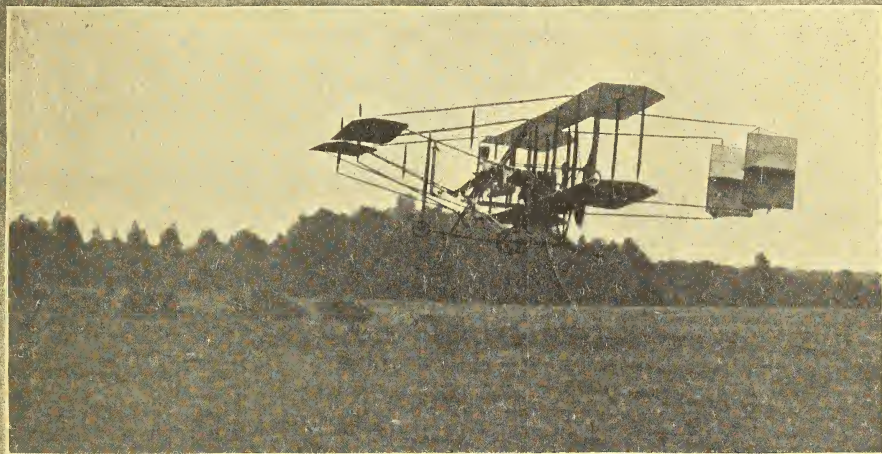


Vol. I.]

THURSDAY, JULY 20th, 1911.

No. 7

**An All-British Representative.**

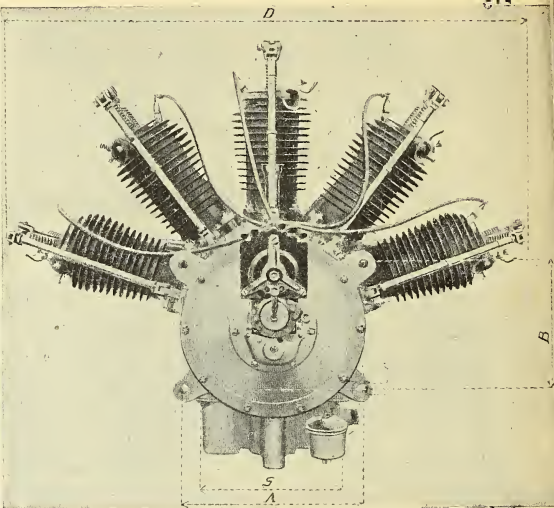
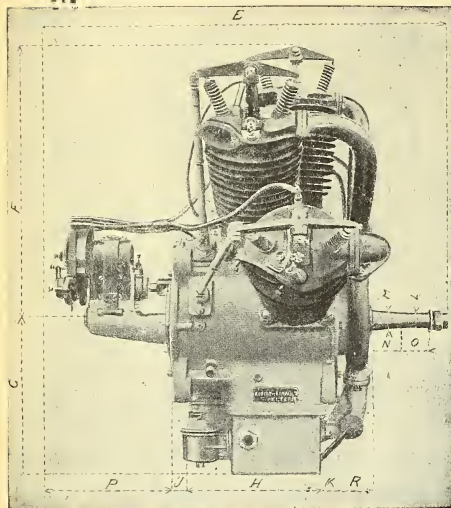


Mr. S. F. Cody on his new Green-engine racer ascending and descending at Laffan's Plain on Saturday last.

SMITHSONIAN OCT 28 1959



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

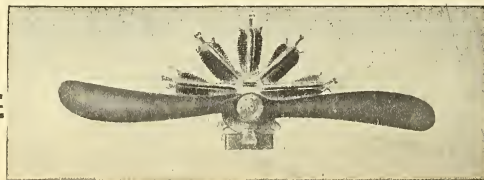
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS ... ..	147	SOME ODISIOUS COMPARISONS .. ..	160
AIR CURRENTS ... ..	151	THE WEEK'S WORK ... ..	162
THE "CIRCUIT" ... ..	152	THE ALEXANDER PRIZE ... ..	165
"WORM'S-EYE VIEWS" ... ..	154		

## Editorial Opinions.

## An Intelligent Englishman.

In a London paper called the *Evening Times*, there appeared recently an article on the aviators present at the *Standard's* lunch to the "Circuit" fliers, from "a correspondent," which has, it appears, given considerable offence to our Parisian contemporary *L'Aute*, one of the finest sporting papers in the world. One can assure our confrères in France that they need pay no attention to the article, for only a cad could have written it; but it is somewhat surprising that any British paper, with any pretence to a sporting spirit, should have published it at all. The article runs thus:—

"It has been customary to look upon aviators as a brave class of men. I am induced to believe that not only are they not brave in the accepted sense of the term, but that they are not interested in the science of aviation, but that all their acts of 'derring do' are expressions of nothing more nor less than an almost superhuman egotism.

"Accept this principle and almost every action of the French people becomes simple. The history of France is the history of egotism. France has been, and always will be, a great nation because her people are supreme egotists. I looked round the table where sat the aviators to-day. They were all Frenchmen, and there was not a strong face amongst the lot. There were dainty, dandified faces, 'natty' faces, and, judged by ordinary standards, weak and effeminate faces. But there was no face with the clean-cut hardness of the horseman, the ruggedness of the footballer, or the strength of the oarsman. No face can be compared to the aviator's face except the face of a chauffeur.

"Now a chauffeur—I am not talking of a taxi-driver—is usually a man who is naturally lazy. His form shows that he has done little hard work in his life, and his face shows that he has little intelligence to exercise much mental labour. He has drifted into the chauffeur business because the life offered him something which could be justified by the name of work.

"An aviator is a glorified chauffeur. Aviators love pleasure; they love applause; and to obtain these they are prepared to undertake risks. To speak of them as pioneers in the cause of progress, or to refer to them as possessing the 'blood of old Gaul' is to me the merest nonsense. Their work with them is just a business proposition, and the sooner we give over talking about 'bird-men,' and referring to their 'bright, eagle eye and stern visage,' the better.

"Their visages are very like that of Charles Hawtrey when he has made up for one of his inimitable parts, except that they are slighter and thinner. But their faces are just as weak, and they part their hair in the centre.

"But what they lack in physique and intelligence they make up for in 'swank.' They wear rings, and watches on their wrists, and I know of nothing more disgustingly effeminate.

"They look altogether more like conquerors of the heart than conquerors of the air, with their dreamy faces and their poses made to kill. But, then, they are French."

It is true that the guests at the *Standard* lunch

were rather a motley gathering, and that some of them did not appear to be overburdened with intelligence, especially on the subject of aviation, but the writer cannot recall any one who seemed sufficiently imbecile to have composed the effusion quoted above.

To call the slim and athletic Vidart, the herculean Gibert, the alert and brainy Conneau, or the tough-looking Kimmerling "weak" or "effeminate," either indicates an advanced stage of insanity, or—happy thought—someone must have been "pulling the leg" of the "correspondent," and have pointed out to him as "airmen" a table-full of representatives of the halfpenny press. After all, are they not also "airmen"—"hot-air" men?

## A Sporting Idea.

Mr. H. Barber has evidently made up his mind to be a kind of fairy-god-father to aviation in his own way. Not content with presenting aeroplanes to the Nation, and so, more or less, forcing the War Office and Admiralty to give their aviators a chance of getting in useful work in spite of officialdom, he has now evolved a scheme of his own for turning the money of cute advertisers and speculative promoters of exhibition flights to good account for the benefit of the science and industry.

His idea is that he will, whenever opportunity occurs, take part in exhibition flying, just as the ordinary professional aviator does, but the money which he may acquire in this way, instead of being devoted to his personal uses, will be placed to the credit of a special fund, and, when that fund grows sufficiently large to suit his purpose, he will put the whole amount up for competition among all our aviators.

He has not yet decided what conditions he will devise for the competition, but it will be designed to encourage reliability and stability in machines, and so to produce improvements in the design and construction of aeroplanes and their engines.

It is understood that the sum acquired by his recent flight from Worthing to Hove with a consignment of electric lamps is to form the nucleus of the proposed fund, and it is to be hoped that Mr. Barber will have many opportunities in the near future of augmenting the amount.

The idea is a most sporting one, and highly to be commended, for it means that money which might otherwise go to mere trick fliers, and so help

to develop in this country a breed of aerial mountaineers similar to that which is rapidly growing in the States, will eventually be put up for competition among the men who are really trying to improve the design of machines, instead of being content to turn out or to fly the very imperfect machines of to-day.

The "Circuit of Britain" which starts on Saturday next will be the **Circuit**. In many ways considerably more exciting than was the "European Circuit," and this for several reasons. In the first place, except for the compulsory stops of twelve hours at the end of each control, it will be a race from start to finish, whereas in the "European Circuit" there was a rest of something like twenty-four hours at the end of each stage, the stages also being a good deal shorter than those in the "Circuit of Britain."

Then, besides this, there is the fact that the competitors will not be allowed to change machines. If a man smashes his machine he has got to stop till it is repaired, so that there will be none of the kind of thing that there was in the "European Circuit," where, if a man smashed his machine badly, he simply went and got a new machine out of the train load which followed the race and started again after a delay of a few hours.

On the other hand, the rule, in itself, is to a certain extent a danger because it may lead to a good deal of recklessness on the part of aviators and constructors. Where a man could bring out a new machine and fly it one was at least moderately certain that the machine was in proper flying order, but, where a machine has been smashed up and hurriedly repaired, there is always the chance that some part strained in the smash may have been overlooked, or that some repair may be scamped owing to the terrific hurry, and so lead to a very much worse smash afterwards.

The marking of the machines to ensure that the same machine is used throughout will probably give rise to a good deal of heartburning and dissatisfaction and general argument, because every constructor will have his own ideas as to what would be a fair way of marking the machines, and very probably none of them will agree with the Committee whose duty it is to decide on the marking. Consequently, that particular Committee will probably have quite an interesting time throughout the race.

The rule is that five parts of each machine and five parts of each engine will be marked before the start, and that two of each of those marked parts must be brought back at the finish. Now, obviously, the manufacturer of the machine of the ordinary monoplane type would like to have the five marks on the machine put on to the fixed tail plane, the rudder, the pilot's seat, the tail skid, and, say, one of the fuselage longitudinals.

In the event of such a machine being smashed, even very badly smashed, all he would have to do would be to put the tail, rudder and pilot's seat (which hardly ever do get smashed) out of the old machine into a complete new machine, change the engine out of the old one into the new one, and go ahead. That, of course, would be strictly within the letter of the rules, but it could scarcely be called going through on the same machine.

On the other hand, if the Committee decides to stamp each wing, the fuselage, the tail and the control lever, a few comparatively minor smashes might easily account for at least four out of the five parts, and forthwith there would be an enraged manufacturer and pilot careering round the remainder of the "Circuit" seeking at every possible opportunity for a valid excuse for doing serious bodily damage to the individual members of that unfortunate Committee.

To add to their troubles, they have also got the engine to deal with, for the job of marking five parts of an engine so that it can take part in a fairly bad smash and still leave two of the five marked parts in working order is no light one.

Talking of engines, it will be interesting to see what actually happens in this race, because the "European Circuit" was really no test of engines at all, the three leading men having changed engines over and over again in the course of the race.

In many cases an engine which really had nothing wrong with it was simply taken out of the machine because the pilot thought it was not pulling properly, and put in again at the next control when he imagined that his new engine had gone wrong, but if an engine really does have any serious trouble it will be no light job pulling it to pieces and practically rebuilding it in, or out of, one of the controls.

The writer is emboldened to think that when the "Circuit of Britain" is over some of our aviators will be considerably less in love with their wonderful rotary engines than they were at the start, for the man who can slog through steadily, even on a comparatively slow machine, without having any engine trouble, will find himself at the finish very much better off than the man who has had to come down outside of a control to have his engine rebuilt.

The most regrettable thing, of course, is that such a very large percentage of the competitors should have decided on using one make of engine. Still, if one of the other makes should score well, it will, at any rate, make its performance all the more noteworthy.

#### A Book Worth Reading.

Miss Gertrude Bacon, who is the daughter of the late Rev. J. M. Bacon, the famous balloonist, has just written one of the few books on aviation which are really worth reading. It is intended for the information and education of those who are only just beginning to take an interest in flying. To them it should be a treasure, and even the most knowledgeable of us will read it with pleasure. The style is light and airy, as befits the subject; and every here and there one comes across flashes of Miss Bacon's own particular brand of humour, which make the book still more readable. She has wisely left the science of aviation alone, and has stuck to sound, commonsense, rule-of-thumb explanations of the machines and their working. The historical portions are excellent, and her own wonderful enthusiasm for aviation invests those of whom she writes with a halo of glory which almost persuades one that they are not as other men are. A very cautious critic might find a small technical error here and there, but it is accurate enough for all practical purposes, and just the thing to give to a novice who "wants to know, you know." At 1s. (one shilling) *How Men Fly* is excellent value; and Messrs. Cassell, the publishers, are to be congratulated on having secured the rights. The photographic illustrations are worthy of the text; but the sketches are bad; the only bad things about the book.

# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz. :

35 h.p.	*60 h.p.	100 h.p.
---------	----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

Mr. Sopwith's recent record flight over Philadelphia, U.S.A.,  
was made with a 60-h.p. E.N.V.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESDEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

## HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



Eight Types

### Monoplanes

From **40** to **80** miles per hour

### Biplanes

From **36** to **50** miles per hour.



Catalogue on Application.

Winner of De Forest Prize.



# *The* **UNIVERSAL AVIATION CO., LTD.,**

*Supply Aeroplanes and all Accessories for them*

## **MONOPLANES OR BIPLANES.**

Engines and Propellers.

Timber, Steel Tube and Fabric.

Aluminium in Sheet or Castings.

Petrol and Oil Tanks and all  
other engine fittings.

Landing Wheels and Skids.

---

**THE BEST & LATEST MAPS & INSTRUMENTS  
FOR CROSS-COUNTRY WORK.**

---

## **Aviators' Safety Belts & Helmets.**

Bolts, nuts, wire, strainers,  
eyebolts, etc. Tools of all kinds  
by the best makers.

---

*Address :—***166, Piccadilly, W.**

Telephone : 3407 Mayfair.

Telegraphic : "Birdling," London.

## AIR CURRENTS.

## AERODROME TYPES.

## No. 1.—Puer Inquisitivus.

He arrives in various ways. It may be on foot carefully carrying a model of the latest fashion in aeroplanes. Or perhaps at break-neck speed on a bicycle of the business-like rather than the ornamental type. The kind of a bicycle which he will tell you gleefully he *daren't* clean because the dirt holds it together. He wears his cap à la Grahame-White, and his pockets bulge with aeronautical literature and — other things; but who knows the mysteries of a boy's pockets?

Or, again, he may arrive *en masse* with other specimens of his kind carefully chosen for the occasion.

And as he arrives so will his behaviour be. In the first case he will come with a certain amount of diffidence it is true, but with an inward feeling that the model he carries stamps him as being a member of the mysteries of aviation, even if it only be on the very outer circle of the magic wing. He will be filled with the hope that some of the "chaps" will notice his model and possibly admire it, and that he will be able to refer afterwards to his conversation with such and such an aviator as though the intimacy was one of long standing. Swank, perhaps, but what of that?

Secondly, he arrives filled to the bursting point with enthusiasm, a genuine thirst for knowledge, and an ardour that is absolutely unquashable. He will ask questions with a persistency and fluency enough to reduce the most amiable mechanic to tears. In his efforts to be obliging he will seem to be an octopus in the number of legs and arms which he scatters round lavishly, tripping up the unwary, and always appearing in the exact spot where he is least wanted. He tears from shed to shed to see what is going on, and patronises the "crowd" when they are excited to enthusiasm over a flight which he tells them is just nothing—"you ought to see So-and-So on his so-and-so" licks that chap into a cocked hat," and so forth and so on. He leaves behind him an impression which is lasting and somewhat chaotic, an atmosphere of breathlessness and the strenuous life.

Or, again, he arrives with his comrades, and in this case he is of the "Man from Cook's" order. He is brimful of information which he bestows on his chosen satellites with the wisdom of a sage, and he wears an air of mild boredom as though he were being really most self-sacrificing in thus instructing this collection of "fatheads" who, he plyingly tells you, don't know a monoplane from a biplane. One cannot help thinking that even if they did they would not dare to say so in his presence, for he has a way of snubbing any uncalculated for knowledge which is effective, to say the least of it.

There are other ways he has of arriving; indeed, their name is legion. Sometimes it is with relations whom he furtively watches for any sign of their giving themselves away. He is anxious to uphold the honour of the family, and breathes more freely when they depart without having committed any very terrible *faux pas*.

But, however he arrives, it must be conceded that he *does* arrive, and that, in whatever guise, he is genuinely interested,

and who knows but may one day be an aviator himself—and come how he may let him be welcome. He is worth all the encouragement that can be given him, for the future of aviation lies in his grubby hands. D. M. H.

## More Perils for our Birdmen.

Yet another danger has been added to those which already daily thrill the hearts of our intrepid "airmen." The well-known designer and constructor, Mr. W. H. Sayers, was cycling to his shed at Brooklands, when a wasp, infuriated no doubt by his expressed contempt for the theories of insect flight in relation to practical construction, flew at him, and, as he had unfortunately left at home his airman's revolver, specially made for him by— (this space to let), succeeded in getting home on his left ear. Mr. Sayers, with magnificent hardihood, continued his ride. Later in the day, when interviewed by our special correspondent, his ear had the aspect of a cross-section of a tomato, and the condition known to boxing men as "thick."

During the training of the Naval Aviators at Eastchurch by Mr. G. B. Cockburn the only accident was one in which Lieut. Samson's machine let him down heavily. Since then that particular machine has been known as Delilah.

The next reader of THE AEROPLANE who writes from the South Coast to say that a Train passed over his head recently without hurting him will be severely *remoued* when he makes his next flight.

Asked by a member of the general public, admiring Mr. Melly's big Blériot: "And is this a biplane or a volplane?"

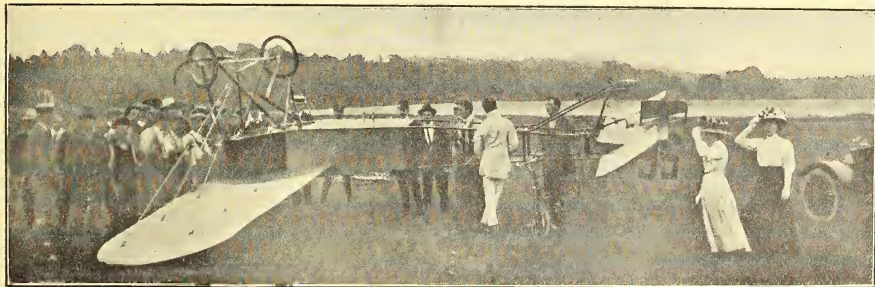
## Who's Who and What's What.

"the genial Tabuteau who, when not flying, is never so happy as when playing the piano.—Daily Mail.

Mr. D. GRAHAM GILMOUR pilots a Bristol biplane with exceptional skill. Of quiet and grave demeanour. Dour and sullen to even his most intimate friends, an earnest student of theology in his leisure moments. Author of "Why I did not Become a Missionary," "Should Pews Be Varnished?" "Ecclesiastical Jottings" (2 Vols.), "Churchmanship versus Airmanship," etc. All round sportsman. Represents Crouch End at Halima, and plays slow music on the Jew's Harp with astonishing *timbre*. Favourite hobbies: Mushroom gathering and glass blowing.

Mr. S. F. CODY will pilot new "Cody" biplane. Of an extraordinarily retiring disposition. Displays an almost girlish modesty. Favourite hobbies:—Dodging pressmen and smashing cameras with a hammer.

Mr. O. C. MORISON will pilot his successful "Morane" monoplane. An inveterate practical joker and hilarious to a fault. Favourite comic journals: "Fruity Lumps" and "Waggish What-nots." Hobbies: Making experiments in the improvement of chassis design; acting as amateur producer of raw material for Bryant and May; and—(I think that will do, thanks.—ED., THE AEROPLANE.) H. M. M.



"Atterrissage à la Morison"—Très Difficile. (Morison's Return to Brooklands on Sunday evening.)

## The "Circuit."

Some notes on the Race for the £10,000 Prize offered by the "Daily Mail" for the "Circuit of Britain."

Some people call this race the "English Circuit." It is not. It is the "Circuit of Britain"; for the Northern stage—Edinburgh, Stirling, Glasgow—is practically the line of the limit of old Roman Britain, and the furthestmost Roman wall from Forth to Clyde. North of that were the Scots proper. West of the Manchester-Bristol route were the unconquered Welsh, and west of Exeter were the unconquered Celts of Devon and Cornwall, so by a strange chance the course practically follows the old Roman line of conquest, and the ghosts of our British ancestors may be, next week, sitting along the route and feeling quite as much annoyed at our invasion and conquest of their air as they, in their life-time, were at the march of the Romans along much the same routes.

I know the old Druids resent this invasion strongly, because my friend G. B. Cockburn tried many times, when he first went to Salisbury Plain, to fly over Stonehenge, and some mysterious current always drove him away, till at last, in an enforced landing his propeller hewed an unfortunate sheep asunder. The sacrifice to the Gods of the Air seemed efficacious, for since then he has been allowed to fly over Stonehenge undisturbed. Also, possibly, he flies better now than he did then.

However, let us to our race. The start takes place at Brooklands—the fit and proper place as the hub of British aviation—at 3 p.m. on Saturday next. Thence the competitors fly to Hendon, being allowed to leave there any time after 3 a.m. on Monday morning. The course then is:—

	Miles.
Hendon—Harrogate ... ..	182
Harrogate—Newcastle ... ..	68
Newcastle—EDINBURGH ... ..	93
EDINBURGH—Stirling ... ..	31
Stirling—Glasgow ... ..	22
Glasgow—Carlisle ... ..	86
Carlisle—Manchester ... ..	103
Manchester—BRISTOL ... ..	141
BRISTOL—Exeter ... ..	65
Exeter—Salisbury Plain ... ..	83
Salisbury Plain—BRIGHTON ... ..	76
BRIGHTON—Brooklands ... ..	40

The towns marked in capitals are those at which compulsory stops of twelve hours have to be made, though it is permissible to borrow time at one stage out of the time at the next. The other towns are the "controls" at which the competitors have to land and sign the "control book," but need not stay longer.

Five parts of each aeroplane, and five parts of each engine are to be marked, and of each set of five two must be brought back intact, in order to qualify for the prize.

The following is a list of the machines entered and classified according to countries:—

## GREAT BRITAIN.

Order of Starting.	Machine and Engine.	Pilot and Nationality.
6 ...	Avro biplane, 60 h.p. E.N.V. ...	R. C. Kemp (Br.)
27 ...	Blackburn mono., 50 h.p. Gnôme ...	B. C. Hucks (Br.)
22 ...	Do. do. do. ...	F. C. Jenkins (Br.)
2 ...	Birding mono., 50 h.p. Gnôme ...	H. J. D. Astley (Br.)
21 ...	Bristol biplane, 50 h.p. Gnôme ...	M. Tabuteau (Fr.)
19 ...	Do. do. do. ...	C. H. Pixon (Br.)
17 ...	Do. do. do. ...	Collins Pizey (Br.)
16 ...	Do. do. do. ...	E. C. Gordon England (Br.)
15 ...	Do. do. do. ...	D. G. Gilmour (Br.)
8 ...	Do. mono. do. ...	O. C. Morison (Br.)
18 ...	Do. do. do. ...	P. Prier (Fr.)
20 ...	Cody biplane, 60 h.p. Green ...	S. F. Cody (Br.)
7 ...	"Baby" bi., 50 h.p. Gnôme ...	R. C. Paterson (Br.)
4 ...	Handley Page mono., 50 h.p. Isaacson ...	R. C. Fenwick (Br.)
25 ...	Howard-Wright bi., 60 h.p. E.N.V. ...	H. Pequet (Fr.)

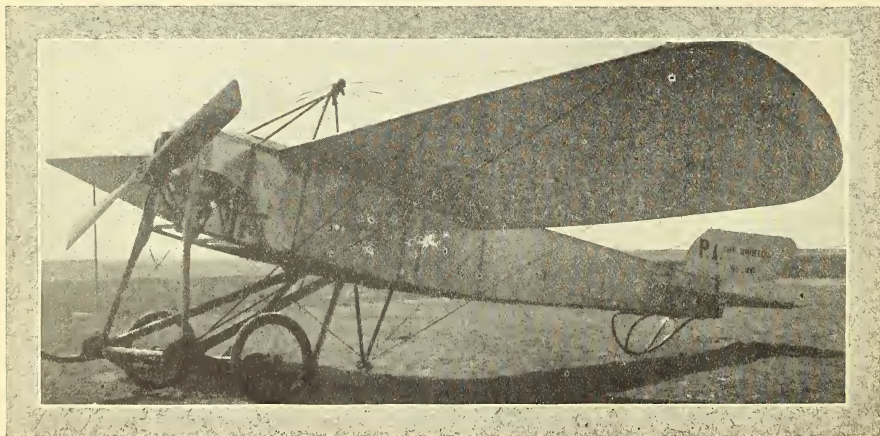
## FRANCE.

10 ...	Antoinette mono., 50 h.p. Antoinette ...	J. Radley (Br.)
1 ...	Bélier mono., 50 h.p. Gnôme ...	"Beaumont" (Fr.)
24 ...	Do. do. do. ...	G. Hamel (Br.)
13 ...	Do. do. do. ...	E. Audemars (Swiss)
12 ...	Do., two-seater 70 h.p., do. ...	Lieut. R. A. Cammell (Br.)
11 ...	Bréguet bi., 60 h.p. Canton-Unné ...	G. Blanchet (Fr.)
23 ...	Do. do. do. ...	De Montaleut (Fr.)
14 ...	Deperdussin mono., 50 h.p. Gnôme ...	J. Valentine (Br.)
5 ...	Do. do. do. ...	Lieut. Porte (Br.)
29 ...	Farman biplane, 50 h.p. Gnôme ...	Wijnmalen (Dutch)
9 ...	Morane mono., 70 h.p. Gnôme ...	J. Vedrines (Fr.)
3 ...	Do. do. do. ...	Brinde-jonc des Moulins (Fr.)
28 ...	Nieuport mono., 70 h.p. Gnôme ...	C. T. Weymann (Haitian)
26 ...	Do. do. do. ...	R. Loraine (Br.)

## AUSTRIA.

30 ...	Etrich mono., 50 h.p. Daimler ...	Lieut. H. Bier (Austria)
--------	-----------------------------------	--------------------------

On the following pages will be found a series of "Worm's-Eye Views" of the machines, prepared by my accomplice, P. K. Turner, so that the machines can be recognised overhead.



The new "Bristol" Monoplane.



**GORDON-BENNETT CUP, 1910**C. Grahame-White with **CHAUVIÈRE PROPELLER****GORDON-BENNETT CUP, 1911**Weymann with **CHAUVIÈRE PROPELLER****PARIS-MADRID**Védrières with **CHAUVIÈRE PROPELLER****PARIS-LONDON**

Valentine, Védrières, Tabuteau, Garros, Barra, and Renaux with

**CHAUVIÈRE PROPELLERS****Sole British Concessionaires****GEO. W. GOODCHILD & PARTNER,**

30-32, Farringdon Road,

**LONDON, E.C.**Telegrams:  
"Whizzing, London."Telephone:  
1707 Holborn.**The New Type B****VALKYRIE**  
**MONOPLANE**

Has now been tested and has proved an unqualified success.

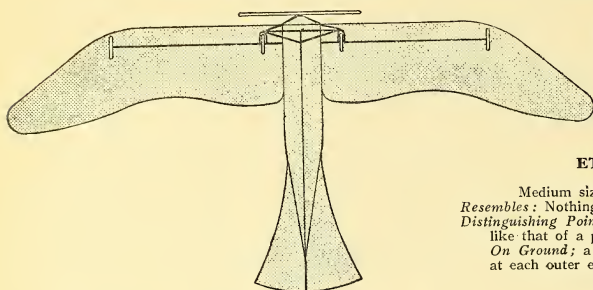
**ESPECIALLY DESIGNED for MILITARY SERVICE****THREE TYPES: 40-80 miles an hour. From £280.****ALL THREE TYPES FLYING DAILY AT HENDON.**  
**TUITION FREE TO PURCHASERS. PARTICULARS ON REQUEST.****THE AERONAUTICAL SYNDICATE, LTD. (ESTABLISHED****MARCH, 1909.)****At the Flying Ground, Collindale Avenue, West Hendon, N.W.**

Telegrams—"AEROVALKY, LONDON."

(6 mile from the West End.)

Telephone—KINGSBURY 24.

## "Worm's-Eye Views" of the Circuit Machines.



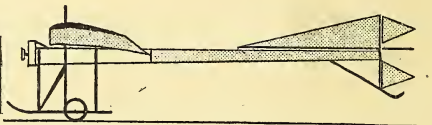
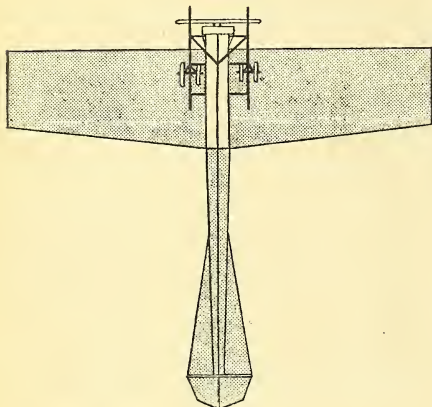
### ETRICH MONOPLANE.

Medium sized monoplane, wings bird-shaped.

*Resembles:* Nothing on earth.

*Distinguishing Points:* *Overhead;* general outline very much like that of a pigeon in the air.

*On Ground;* a long spar under each wing, with a wheel at each outer end. Two small triangular rudders.



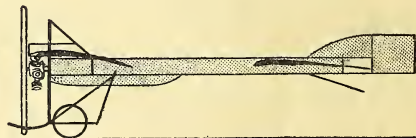
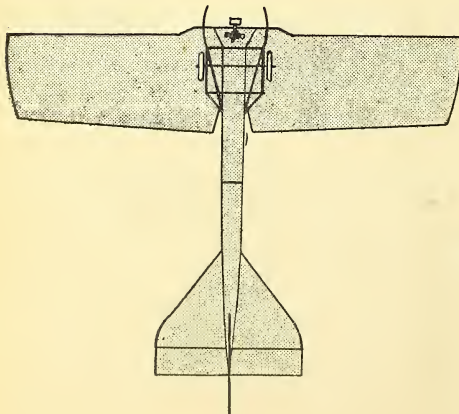
### BLACKBURN MONOPLANE.

A rather large monoplane with wings tapered from back to front.

*Resembles:* Deperdussin and Antoinette.

*Distinguishing Points:* *Overhead;* long narrow triangular tail, with pointed flap behind. Large fin on top. Square tipped wings, and blunt bow to body.

*On Ground;* two horizontal skids, upturned at front. Four wheels in a row. Triangular rudders above and below tail flaps.



### DEPERDUSSIN MONOPLANE.

A small machine with back edge of wings tapered.

*Resembles:* Blackburn and Antoinette.

*Distinguishing Points:* *Overhead;* a short broad triangular tail with an oblong flap behind it. Small fin above tail. Wings taper from back to front, and tips almost squared off.

*On Ground;* downward pointing skids, like hocky sticks, upturned at front end. Very slim body. Rudder above and behind tail-flap.

# GREEN'S

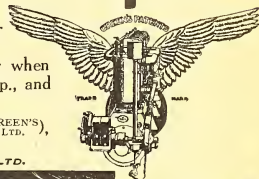
—ALL—  
BRITISH **AERO ENGINES**

The Engines for Record making. Combine Reliability, Power and Economy with Light Weight.

All Green Engines are water cooled and maintain highest efficiency when running continuously under full load. Made in two sizes, 30-35 h.p., and 50-60 h.p. Particulars and prices upon application.

**THE GREEN ENGINE COMPANY** (SOLE LICENCEES UNDER THE GREEN'S MOTOR PATENTS SYNDICATE, LTD.),  
55, Berners Street, Oxford Street, London, W.

E.H.G. MAKERS FOR THE PATENTEES—THE ASTER ENGINEERING CO., LTD.



## Nieuport Monoplanes.

**GORDON-BENNETT CUP, 1911.**

**1st. Weymann on a Nieuport. 3rd. Nieuport on a Nieuport.**

GENERAL AGENT FOR THE BRITISH EMPIRE:—

**MAURICE DUCROCQ, Brooklands Aerodrome, Weybridge, Surrey.**

## MULLINER LONG ACRE, LONDON, & NORTHAMPTON, LTD.

*Aeroplane Works:* VARDENS ROAD, CLAPHAM JUNCTION, LONDON

Aeroplanes Built to Clients' own Designs. Best Material and Best Workmanship.

Clients' Personal Supervision Invited.

**SOLE AGENTS for NORMALE PROPELLORS.**

The most efficient Propellor in the World.

**As used by M. Beaumont, the Winner of the CIRCUIT EUROPÉEN D'AVIATION**

Telephone: 1987 Battersea.

Telegrams: "Aeroeraft" London.

## 'AVRO' PROPELLERS

OF PROVED EFFICIENCY.

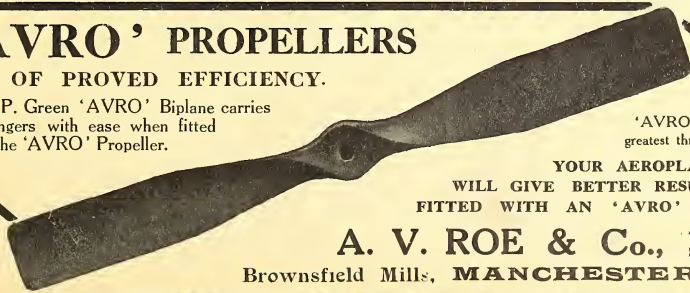
35-H.P. Green 'AVRO' Biplane carries passengers with ease when fitted with the 'AVRO' Propeller.

'AVRO' Propellers give greatest thrust per H.P.

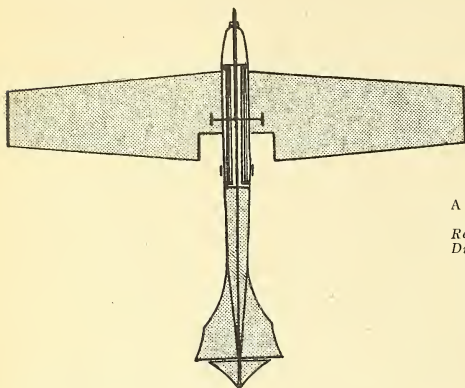
**YOUR AEROPLANE  
WILL GIVE BETTER RESULTS WHEN  
FITTED WITH AN 'AVRO' PROPELLER.**

**A. V. ROE & Co.,** The Aviator's Storehouse,

Brownsfield Mills, **MANCHESTER.**





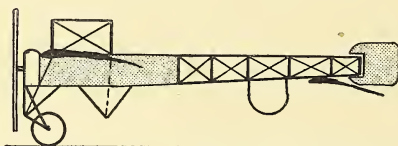
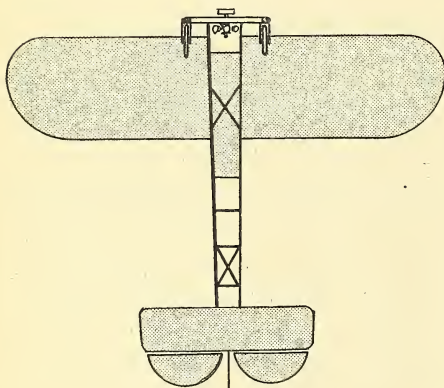
**ANTOINETTE MONOPLANE.**

A very large machine with wings tapered at front and back edges.

*Resembles:* Blackburn and Deperdussin.

*Distinguishing Points:* Overhead; square piece cut out of back edge of each wing near body, triangular tail with triangular flap. Shining metal along body under wings. Bow like a boat.

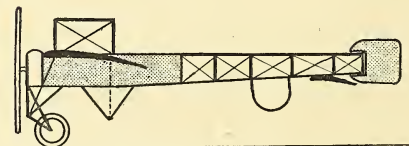
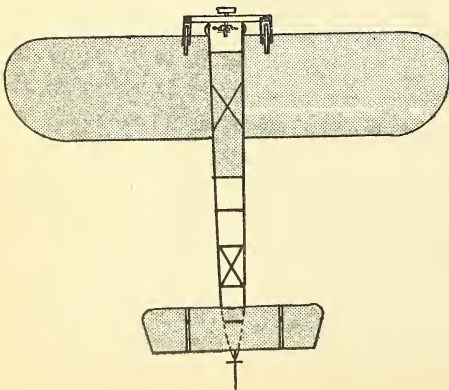
*On Ground:* engine under a bonnet; one downward-pointing skid; two very small wheels; a very graceful machine.

**BIRDLING MONOPLANE.**

A small machine with wing-tips rounded off at back edge.

*Resembles:* Blériot.

*Distinguishing Points:* two semi-circular flaps at back of oblong tail, with rudder between the two flaps.

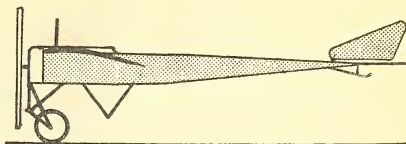
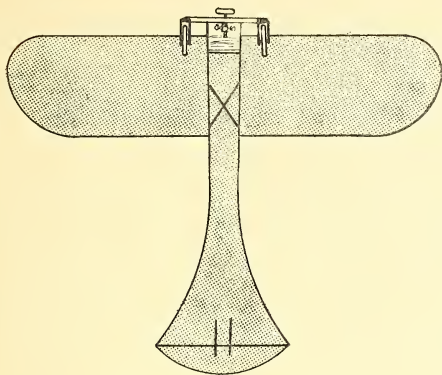
**BLÉRIOT MONOPLANE (CROSS CHANNEL).**

A small machine with the wing-tips rounded off at the back.

*Resembles:* Blériot (cross country), and Birdling.

*Distinguishing Points:* Overhead; only front half of fuselage covered with fabric. Oblong tail, with a flap at each end. Two wheels and no skids.

*On Ground:* as in flight. Rudder behind tail.

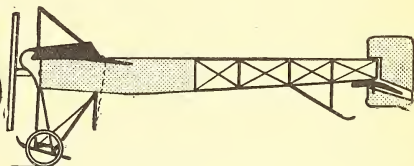
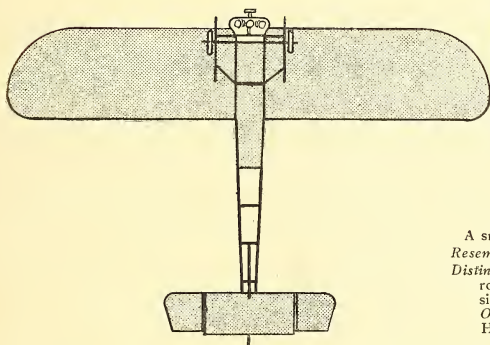
**BLÉRIOT MONOPLANE (CROSS COUNTRY).**

A small machine with wing-tips rounded off at back edge.

*Resembles:* Blériot (cross Channel) and Birdling.

*Distinguishing Points:* Overhead; fuselage all covered with fabric. Birdlike tail, with semi-circular flap at back.

*On Ground;* as in flight, also, triangular rudder (like a shark's fin) above tail. Two wheels, and no skids.

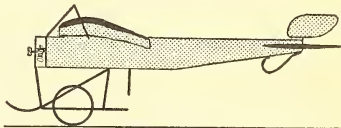
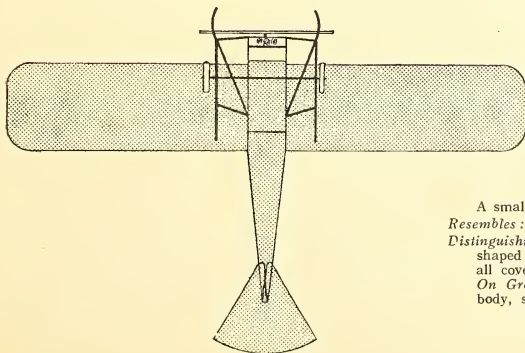
**MORANE MONOPLANE.**

A small machine with wing-tips rounded off at front edge.

*Resembles:* Blériot.

*Distinguishing Points:* Overhead; particularly the wings rounded in front, small skids, with wheels connected by single axle.

*On Ground;* rudder with hole cut in to allow tail to pass. High dashboard in front of pilot.

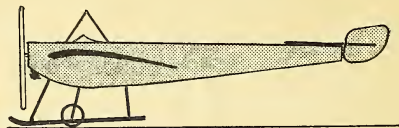
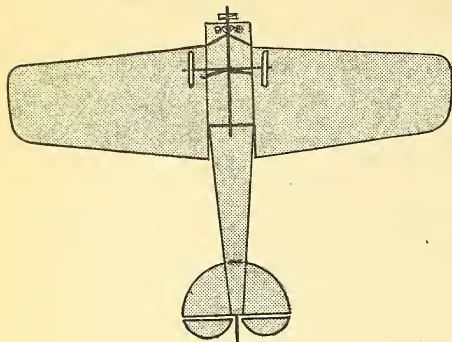
**BRISTOL MONOPLANE.**

A small machine with wings rounded at corners only.

*Resembles:* Nieuport.

*Distinguishing Points:* Overhead; Triangular tail with fan-shaped back edge. Skids with inward curling tips. Body all covered in.

*On Ground;* two skids like hockey sticks, wings above body, small rudder above tail, small tail-skid.



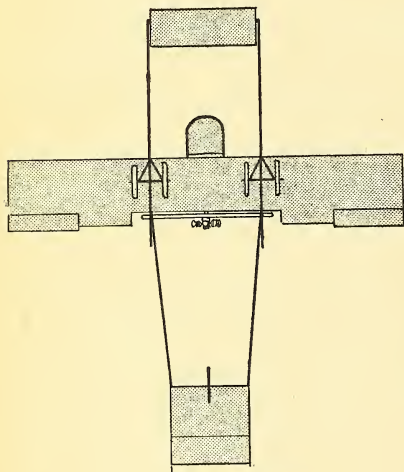
#### NIEUPORT MONOPLANE.

A small machine with wings rounded at corners only.

*Resembles:* Bristol monoplane.

*Distinguishing Points:* Overhead; semi-circular tail with two semi-circular flaps behind. Single central skid. Bluff bird-like body.

*On Ground;* one skid only; wings just above middle of body, rudder level with tail, no tail-skid.



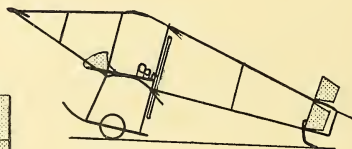
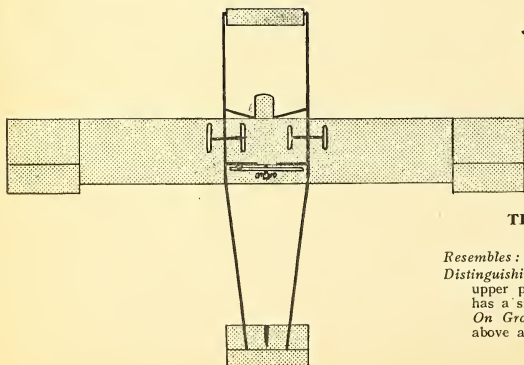
#### "BABY" BIPLANE.

A small machine with propeller behind.

*Resembles:* Bristol, Farman, and Howard Wright.

*Distinguishing Points:* Overhead; top and bottom planes same length. Pilot perched very far in front of main planes.

*On Ground;* engine half-way up between planes instead of just above bottom plane, giving appearance of sword of Damocles over pilot's back. Lower plane close to ground.



#### THE HOWARD WRIGHT BIPLANE.

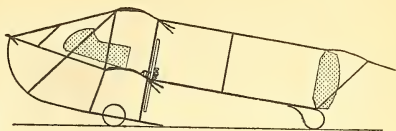
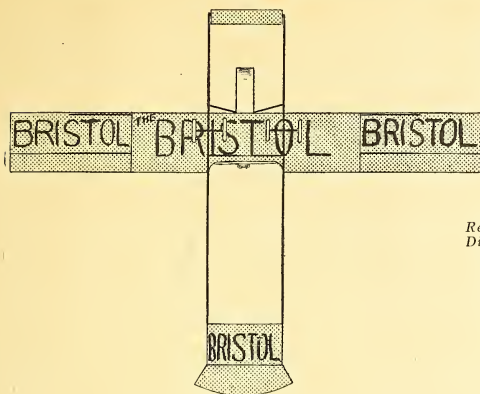
A large machine with propeller behind.

*Resembles:* "Baby," Bristol, and Farman.

*Distinguishing Points:* Overhead; Balancing flaps at ends of upper plane only; rudders above and below tail, which has a single plane. Upper plane longer than lower.

*On Ground;* skids do not meet the elevator. Rudders above and below tail.





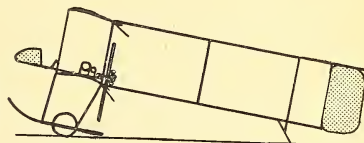
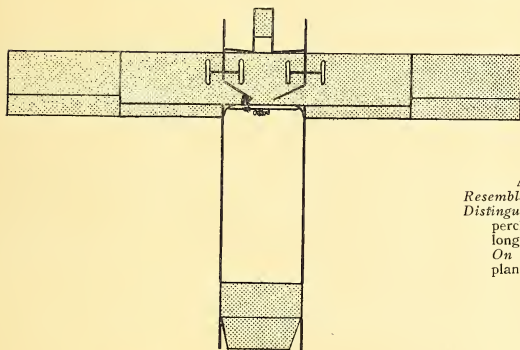
#### THE BRISTOL BIPLANE.

A large machine with propeller behind.

*Resembles:* "Baby," Howard Wright, and Farman.

*Distinguishing Points:* Overhead; a square tail with single plane, with fan-shaped flap behind; the word BRISTOL painted in black. Two rudders below tail. Upper plane longer than lower.

*On Ground:* the skids are curved right up in front, to meet the elevator-plane.



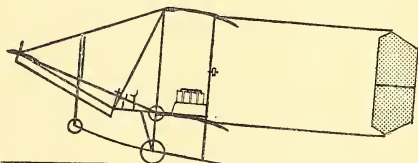
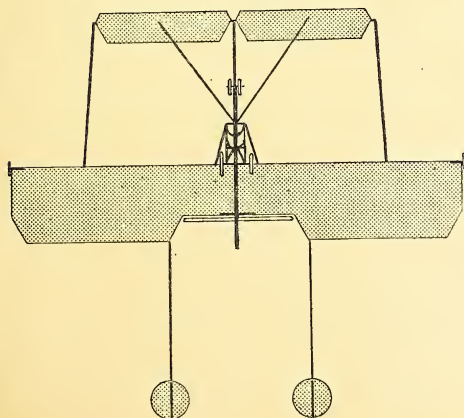
#### HENRY FARMAN BIPLANE.

A very small machine with propeller behind.

*Resembles:* "Baby," Bristol, and Howard Wright.

*Distinguishing Points:* Overhead; no front elevator plane, pilot perched very far out in front of planes. Upper plane longer than lower.

*On Ground:* as in flight. Two rudders below single tail plane.



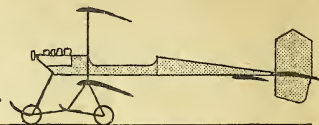
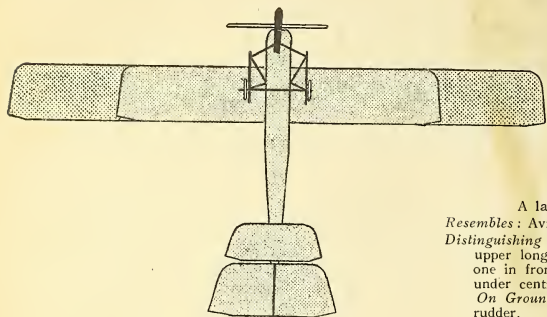
#### CODY BIPLANE.

A very large machine with propeller behind.

*Resembles:* No other machine.

*Distinguishing Points:* Overhead; two front elevator planes, side by side; two rudders, each with a small, round, horizontal plane fixed to it. No tail. Wheels on tips of lower plane. Both planes same length.

*On Ground:* very solid looking; large propeller driven by chain from the engine. Small wheels at tips of lower plane. Kangaroo-like tail behind main wheels and under propeller.

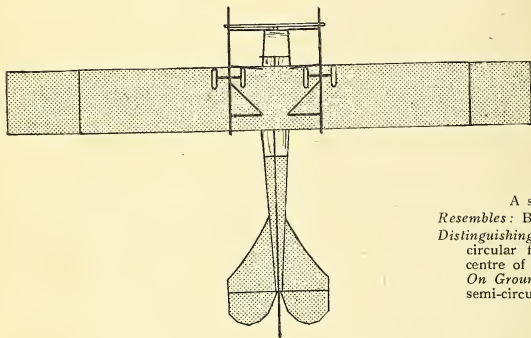
**BRÉGUET BIPLANE.**

A large machine with propeller in front.

*Resembles:* Avro.

*Distinguishing Points:* Overhead; long and narrow planes, upper longer than lower, two more or less oblong tails, one in front of the other. Three wheels, like a tricycle, under centre of main planes.

*On Ground:* same as in flight; built of steel; enormous rudder.

**"AVRO" BIPLANE.**

A small machine with propeller in front.

*Resembles:* Bréguet.

*Distinguishing Points:* Overhead; triangular tail with semi-circular flaps behind it. Four wheels, and skids under centre of planes. Upper plane longer than lower.

*On Ground:* built of wood. Very deep body. One large semi-circular rudder.

## Some Odious Comparisons.

Of course, any attempt to forecast the result of a race of this kind resolves itself into four headings—pilots, machines, engines, and organisation.

In this particular instance, owing to the necessity of having at least two of the original parts of machine and engine at the finish, reliability and constructional importance become more important than hitherto.

Personally, I still hope to see a race in which all repairs and replacements must be made with a tool kit carried on the machine, and in which the competitor must make them *solus*, unless he carries a mechanic as passenger. Still, the Royal Aero Club rules are a step in the right direction.

**Engines.**

Considering engines, the following makes are represented: Gnome, E.N.V., Antoinette, Canton-Unné, 60 Green, and Austrian Daimler. The Gnome, of course, we all know, and most of the readers of this paper already know my opinion of it. I am glad that it is about to be tested under conditions which give, more or less, a real criterion of reliability. Of course, it is much harder to get a Gnome engine repaired *en route* than to replace it bodily, and I fear that, with the exception of a few old and well-tried motors (Hamel's and Valentine's, for instance), it will cause great disappointment to many competitors. It will be remembered that reports said that the Gnômes in the European Circuit were replaced twice on an average—i.e., three engines were used per machine (approximately).

The 60-h.p. E.N.V. will be used in the Avro biplane and in the Howard-Wright. Judging by the performance of the E.N.V. on Pixton's Bristol, on which he is flying in the Manville competition, the makers have got over their old bugbear of over-heating. I must say that I think very favourably

indeed of the chance of this engine, for I know that it has one great advantage; when it is once in good going order it will run for weeks with only the most ordinary attention and care.

The Canton-Unné is a seven-cylinder radial water-cooled engine, and is fitted to one, at least, of the Bréguet machines. This is its first appearance in England, and so I can do no more than wish it luck. M. Bréguet has a high opinion of it, and Mr. Wilson, of A. Turner and Co., Ltd. (the Bréguet agents) says this particular engine has done a lot of very good work without giving trouble.

The Green will be fitted to the Cody machine, and Cody probably knows more about the Green engine than does anyone else, so that this engine should do distinctly well. His new engine gives a terrific amount of power without ever running on full throttle.

Taking the engines as a whole, it seems to me that the amount of expert attention which will be devoted to the Gnome may or may not balance the easier conditions of the stationary engines. I feel very uncertain about it. My own private opinion is that the E.N.V. and Green should both put up a good show.

**Machines.**

The probable starters are: Blériot, Birdling, Morane, Deperdussin, Bristol, Antoinette, Blackburn, Nieuport, and Ethrich monoplanes; Avro, "Baby," Bristol, Bréguet, Cody, Howard-Wright, and H. Farman biplanes.

If any monoplane completes the course without accident, no biplane is likely to win, though the "Baby," the Avro, and the new Bristols are very fast. As near as one can estimate, the Nieuport is "on its own" as regards speed—over 70 miles per hour—the rest of the monoplanes flying at from 55 to 65 miles per hour. The Bristol, Bréguet, Avro, "Baby,"

and Cody biplanes fly at 45 to 50 miles per hour, the Howard-Wright being rather slower.

Automatic stability is rather important in a race which, as in this case, is over hilly country, which will have *remous* in every possible heraldic attitude.

There seems an immense difference of opinion among constructors as to the desirability of this factor—why, I cannot see. Notable points are that Blériot (except for racing machines) seems at last to be a convert, his new cross-country machines having a non-lifting empennage and a dihedral angle, though they still have the old chassis.

The Morane and Deperdussin, and most of the biplanes, still show a lack of automatic stability, both lateral and longitudinal.

On this point, the best machines, in order, seem, as far as I can see, to be the Nieuport, the Antoinette, the Avro, and the Etrich.

The landing chassis is exempt from marking, but it is still rather important, since its failure under stress may, and probably will, involve injury to the pilot or the rest of the machine, or both. In considering chassis, one must remember that the ground is in parts impossible for any chassis, and that most of it is atrocious; and one must also consider the speed of the machine. Another important point is that the machine should get off quickly, and should pull up quickly on landing—this is a matter largely governed by chassis design.

Taking these various points into consideration, I feel inclined to place the best machines (from this point of view) as follows: Cody, Bristol biplane, Avro, Farman, Howard-Wright, Blackburn, Nieuport.

Solidity in construction and engine-fixing is of immense importance. I have not, of course, seen assembled all the particular machines to be used in the race; but from my knowledge of the firms involved, and from examination of their standard machines, I am inclined to place them: Bréguet

(all steel), followed by Bristol, Avro, Cody, and Morane, all equally good.

#### Pilots.

It would ill become me to enter here into a comparative, and therefore odious, discussion about the various pilots. It will be a certainty that every pilot in the race is a good flyer: the question is as to their "navigation." The pilots who have had actual experience in long cross-country work are "Beaumont," Lieutenant Reynolds, Paterson, Morison, Védriens, Cammell, Valentine, Gilmour, England, Pizey, Pixton, Prier, Cody, Tabuteau, Hamel, Weymann, Wijnmalen, and Bier. But though experience will always be helpful, there are born cross-country fliers—Pixton and Hamel, for instance—just as there are men who always lose their way. It is quite probable that several of the new men may show up and do great things.

#### Organisation.

The object of the limited replacement clause in the rules is, of course, to minimise the hitherto paramount importance of money and organisation. To some extent it will fulfil this object, since, if the stamped parts be chosen as they should be, no organisation will put in the running a machine which has been badly smashed.

Nevertheless, the matter will still remain of immense importance, and here, above all, will score the firms of Blériot, Morane, Deperdussin, and Bristol, all of which are foresighted enough to cast money upon the world now, knowing that, sooner or later, it will return unto them.

#### Conclusions.

Summing up on all these various counts, one's forecast for the race will depend on one's idea as to the comparative importance of these points. My personal opinion is that a very high percentage of finishers will be found.—P.K.T.

#### POSSIBLE ALTERATIONS.

Among the possible non-starters are:—Fenwick, on the Handley-Page, which, so far as I can gather, has not been flown far yet; Hucks, on the Blackburn, who had the hard luck to smash up in practice on Thursday; Brindejonc de Moulinais, who was badly hurt on Saturday; Robert Loraine, who can scarcely have had sufficient training on his Nieuport to justify his starting; and de Montalent, who may not be able to get his machine here in time.

Pecquet on the Howard-Wright will probably be replaced by Lieut. Reynolds, of the Air Battalion, who has practically got official permission to fly. Radley told THE AEROPLANE on Monday that he did not intend to start at all, either on Antoinette or Bristol. Tabuteau will almost certainly reserve himself for the French *Grand Prix*. Morison is not a certain starter. Wijnmalen has lately been flying a Deperdussin, and may fly that instead of a Farman. And it is rumoured the Lieut. Conneau ("Beaumont") may not come over.

The race is the most open of all big races. There is nothing to choose between any one of the dozen best entries, and the

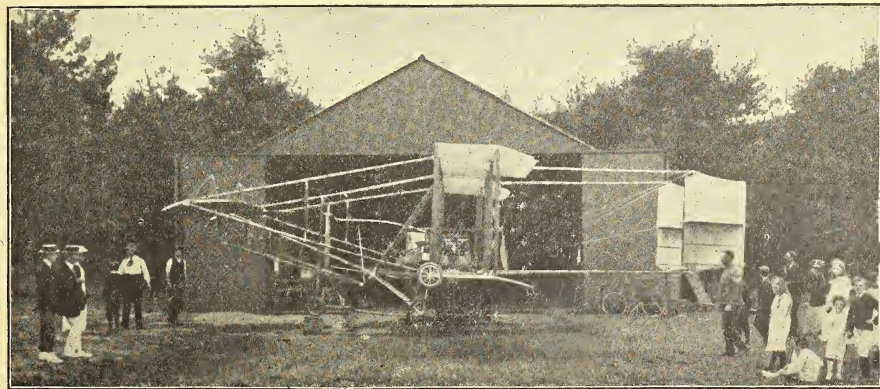
remark of a writer in the *Observer* that "a glance at the list reveals the absence of some of our leading fliers" is quite an uncalculated slight on our men who are flying.

Except our army and navy aviators, whose absence is a real loss to the race, for they certainly do know as much as the best competitors, I know none better.

As in the Grand National, the betting is about 10 to 1 against any given man finishing the course, but after that it would be hard to pick out a favourite. A well-driven, fairly fast biplane is just as likely to get through as a high-speed racing monoplane, and far more depends on luck with engines and weather than on any difference between the men.—C. G. G.

#### Hamel's Training Work.

Just by way of training Gustav Hamel, after doing his Hendon to Brooklands and back trip on Saturday, thought he would spy out the country to the North, so on Monday evening he started about 7 p.m. and flew from Hendon to Harpenden and back in a very nasty, gusty wind. He only took 39 minutes over the double trip.



The new Cody racing biplane for the "Circuit." Mr. Cody is seen in his shirt-sleeves on the left.



## The Week's Work.

Morison Flies from Brighton to Brooklands—More New Pilots' Certificates—Preparations for the "Circuit"—The Struggle for the Manville Prize—The Indomitable Cody—Hamel flies at Birmingham and across country from Hendon.

### Monday, July 10th.

BROOKLANDS.—Howling gale; nothing doing.

### Tuesday, July 11th.

BROOKLANDS.—The energetic Blondeau out at dawn giving lessons to Mrs. Hewlett and Brown, of U.S.A. Gale blowing rest of day.

HENDON.—Greswell out on Blériot in bad wind. Driver got certificate on school Farm.

EASTCHURCH.—Lieuts. Samson and Gerrard made several short flights before breakfast. Fine appetiser is flying.

### Wednesday, July 12th.

BROOKLANDS.—Blondeau, with Mrs. Hewlett and Brown, again the only ones out.

EASTCHURCH.—Lieuts. Samson, Longmore, Gerrard, and Gregory doing lengthy flights across country, with passengers, on the naval "Short" biplanes, heights varying between 1,000 and 3,000 feet. North-easterly wind blowing, which registered on the ground 10-12 m.p.h., but at 1,000 feet fully 30 m.p.h. In spite of this machines behaved splendidly in hands of skilful naval quartette, holding the wind almost without a tremor.

BIRMINGHAM.—First flights near Birmingham given by Gustav Hamel on Blériot at Hams Hall, Lord Norton's place. About 6,000 people were present. Two good flights. One at 4.30 p.m. in very nasty wind, and one almost in the dark about 9 p.m. Marvellous exhibition of nerve by a man who had had such an appalling smash only ten days before. Probably would not have attempted it, only that he had given his word to Lord Norton to fly on this date when he met him at Warwick Castle on Whit Monday.

HENDON.—Paterson out with Livingstone as passenger. Livingstone at lever for first time brought machine down, and landed in good style.

### Thursday, July 13th.

BROOKLANDS.—Bristols out at 4.50 a.m. Captain Brooke-Popham, of the Staff College, and Mr. de Grey-Warner (to whom be apologies for misspelling his name last week) made two flights, each of quarter hour. Then wind got up, and Pixton, as usual, with it, taking Brooke-Popham as passenger. Later both pupils did two circles in gusty 12 m.p.h. wind. Walton-Edwards' "Colossoplane" appeared for first time in

afternoon. Enormous biplane which warps front edge of plane, and has most ingenious system of levers to do it. Tested for engine pull only.

LAFFAN'S PLAIN.—First appearance of new Cody biplane. Magnificent piece of work. Started with slight accident. Cody found her steering queerly on ground. Thinking rudders were not affected by propeller draught, owing to new position, took her into air to try effect there. Machine rose at once, and heeled over. Cody, using rudders and warp, tried to get her up, but came down on wing-tip. Net result: two burst tyres on main chassis. Then found rudder wires crossed wrong way, so the more he pulled her round the more she went the other way, rudders being sufficient to overcome warp. Splendid test for machine. Green engine pulling magnificently.

EASTCHURCH.—All four naval officers were again out practising. Lieut. Gregory made practically a tour of the island, and finished a fine flight with a *vol plané* from 1,700 feet. Mr. Ogilvie out on the "Baby" Wright for upwards of an hour, flying splendidly at some 1,500 feet. Dunne monoplane, piloted by her designer, also making straight flights.

### Friday, July 14th.

BROOKLANDS.—Brooke-Popham out at 4.30 a.m. for quarter of an hour; then Pixton out testing E.N.V.-Bristol for Manville Prize. Brooke-Popham again out doing figures of eight in eight-mile wind. (Lucky not a twelve-mile wind, or might have tried figures of twelve—hiatus between figures might indicate discontinued flight after first straight line, the two being the subsequent gyrations on ground.) In evening de Grey-Warner made two flights for certificate. First no good; landed too far from observers. Second much better. Afterwards Pixton out on E.N.V.-Bristol up to 800 feet, with a Staff College captain as passenger. Brooke-Popham up at 800 feet and out over Weybridge on school Bristol.

During evening Morison arrived from Shoreham on racing Morane. Trip took forty minutes—just over 60 m.p.h. Machine a wicked looking beast with black bonnet, and splashes of blue on the chassis.

Johnstone, late of Blondeau-Hewlett school, made trial trip on Jack Dare's Howard-Wright-E.N.V. and shaped well. Possibility for him as competition pilot. Blondeau out with Mrs. Hewlett in passenger's seat controlling lever.

HENDON.—Dyott, Hamilton, Metford, Jackson, and Abercrombie practising on Blériots.



The new racing "Bristol" Biplane.

**LAFFAN'S PLAIN.**—New Cody out flying in good style. Heaps of power, throttle of Green engine only one-third open. Very fast. Some few adjustments still necessary in weights and head resistance.

**EASTCHURCH.**—Lieuts. Samson and Gerrard both astir early, taking advantage of bright, calm morning to get in about two hours' good flying practice. Samson, Longmore, Gerrard and Gregory all busy again in the evening. Lieut. Samson, in course of one flight, gave masterful exhibition of right and left-hand turns, banking the machine up at amazing angle. Later in evening, carrying a passenger, he gave another brilliant display, finishing with a long spiral *vol plané*, which is quite a speciality of his. Lieut. Gregory flew over to Leysdown, then, via Eastchurch and Minster, he passed out to sea, and, keeping at about a mile from the coast, he rounded Garrison Point. Leaving the Medway on his right, he proceeded to Queenborough and Kingsferry, and thence followed the River Swale back to the aerodrome, where he alighted with a long steady *vol plané* from 1,800 feet.

**FILEY.**—Hucks, on Blackburn, started out to win the Stuart Hirst £50 prize for first flight from Filey to Leeds on Yorkshire-built machine. Made test flight of four miles at 10.30 a.m. round Filey Brigg and the town, and started on the flight at 11.40. Passed over Garton and Weaverthorpe, but near Sherburn Gnome started misfiring. Forced to come down at Heshlerton Grange, and in avoiding cattle smashed chassis, wings, and propeller. Hucks unhurt, and still time to repair and start on "Circuit."

#### Saturday, July 15th.

**BROOKLANDS.**—In early morning Brooke-Popham, on school Bristol, got certificate with two good flights, at 170 and 250 feet. Then de Grey-Warner did second of his certificate flights, going up to 230 feet and landing well.

Mrs. Hewlett flying well on Blondeau-Farman, driving machine herself with Blondeau in passenger's seat merely in case of a mistaken manoeuvre. Brown, of U.S.A., also out as passenger with Blondeau.

Rest of day very windy. Pixton with E.N.V.-Bristol, and Cody with old Green-Cody, both ready for Manville Prize flights. Machines examined by Editor of THE AEROPLANE on behalf of Royal Aero Club, and certified All-British. About midday Cody decided to take machine out for trial. Started engine by his usual process of winding up and starting on switch. Result, back-fire and smashed propeller shaft. (N.B.—Not engine shaft, but independent chain-driven shaft on which propeller runs.)

Cody's luck over Manville Prize right out. Flight this day absolutely necessary if Pixton flew. Pixton had already flown three days and Cody one only, and rules decree that winner must fly on half the days on which flights are made. Only two more days left.

Only resource was to fly new machine at Laffan's Plain. Consequently Cody abducted Editor of THE AEROPLANE, and bore him off to Aldershot to act as observer there. Started at 3.15 p.m. from Brooklands. Two tyres punctured, including Stepany. Two new tubes put in, and two more stops to pump up. Crew on board wishing they had got Atlas jackets in tyres.

After Cody had left, Pixton, with Briggishshaw as passenger, put in 1 hr. 1 min. on E.N.V.-Bristol. Knocked about a good deal by wind, but not so badly as last "Manville" day. This flight gives Pixton the £500. Pixton flew on four days, Cody on one, i.e., five days' flying. Only two days left, so if Cody flew on both he would only have flown on three days

out of seven, and rule decrees that winner must fly on half the days on which flying takes place. Therefore, exit Cody. Hard luck, after all his pluck and hard work. All the same, congratulations to Pixton on his first win in a big competition.

Hamel arrived from Hendon, whither he had shipped his machine from Birmingham. Arrived 6.25 p.m., and asked Morison to "see him home." Morison got off at 7, and circled round for ten minutes while Hamel's engine refused to start. At last Hamel got off; but at the same moment exactly Morison touched ground, being "fed up with hanging about." However, seeing Hamel off, he started again, and after a circle each they left together for Hendon. Morison intended to see him to Hendon and return without landing, but upon nearing London temptation was too strong—old habits reasserted themselves, he landed at Hendon and went up to town with Hamel.

**LAFFAN'S PLAIN.**—Cody and Co. arrived from Brooklands 5 p.m. to find new machine with propeller only half fitted. Gallant effort by Cody to get machine ready by 5.15 p.m. so as to get in necessary quarter hour before time expired at 5.30 p.m. Quite impossible, so philosophic Cody, lunchless and tealeless, decided to make a few trial trips. Wind rather worse than better, but machine flew capitally, taking very little of available power. Bar accidents Cody stands a very good chance for the "Circuit."

**EASTCHURCH.**—After two hours' bright sunshine in early morning, when Lieut. Samson was out on Short biplane No. 38, putting in quite a lot of useful work, sky became overcast and wind rose so rapidly as to make flying impossible.

**BELAST.**—Ferguson monoplane recovering from "discontinued flight" at Newtonards; Williams and the other pupil at work fitting new wings; new chassis finished and engine being fitted; wheel is being fitted in front in place of former skid of Antoinette type. Ferguson found the skid all right on dry ground, but when landing on soft sand behaved too much like a jumping pole. Machine should be ready for flying next week.

**HENDON.**—Hamilton and Jackson out on Blériots in morning. Lieut. Hodson, R.H.A., Lieut. Ohlbach, of Swedish Navy, and Mr. James May at work at Grahame-White School. In evening Hamel flew to Brooklands and back with Morison.

#### Sunday, July 16th.

**BROOKLANDS.**—Blondeau-Hewlett school machine out, with Mrs. Hewlett and Brown at 4 a.m. practising brevet flights. Pecquet out on Humber monoplane with Humber engine; the engine seemed to be pulling well. Exhaust has a hefty bark, very much like Clerget in sound. Johnstone up in the Howard-Wright, flying excellently. He has now had the machine out three times, and has already carried eight passengers. This is good, considering the difference there is in handling between the Howard-Wright-E.N.V. and the Farman, on which he learnt.

During Saturday night and Sunday morning interesting example of "forced draught" construction at Brooklands. Macfie and entire staff, with propeller maker and much volunteer assistance, all busy assembling new racing biplane—an all-night job—while kind friend kept them alive and amused by performance on borrowed gramophone, yet other volunteer assistants performing on quaint instruments of percussion such as are usually associated with South Sea Islanders and other children of Nature. Wind rose to a gale later in day, and only excitement provided by Macfie biplane's appearance to be photographed on the *morituri te salutant* principle. Constructor and crew much *extenué*.



The Nieuport Two-seater which Weymann is to fly in the "Circuit."



Everyone on way home at 8 p.m., when monoplane, travelling over 90 m.p.h., espied to eastward. Identified as Morison returning from Hendon with gale behind. Evidently having very bad time over Weybridge, but came down steeply over paddock, cutting ignition in and out. Expected to see him turn at end of track and land head to wind, but Morison thought otherwise. Came down in centre of ground at fully 80 m.p.h., ran along 200 yards, wheel buckled, wing touched, and machine turned complete somersault. Rush of cars back to ground, expecting horrible tragedy. Arrived to find Morison inspecting damage to machine and explaining that he had been "poured out underneath" after the machine had turned over. Net result, one broken wing and tip of fuselage. Machine turned over on to point of propeller blade, which did not break, but, instead, wrecked inside of engine. Wonderful example of Morison's wonderful luck. Morison's time from Hendon to Brooklands (21 miles) just about 12 minutes, timed by the watch on his dashboard, from aerodrome to aerodrome while in the air.

#### MORE "PLAIN" TALES.

Anyone imagining that, because Salisbury Plain is the headquarters of the Air Company, the members of it will be necessarily found here, would be greatly mistaken. They occasionally come home to roost there, but most of their time is spent away in other nests, such as Farnborough, Hendon, Brooklands, Oxford, etc. It's quite bad enough now, but what will it be like when the mating season commences?

Mr. Barrington Kennett is the most offender: he hasn't turned up for nearly a month. He began by going to Brooklands, and he and Mr. Reynolds were quite happy there for a time, though they don't think much of Brooklands as an aerodrome in comparison with the Plain.

After that B.-K. went to Farnborough, but they put water in his petrol, and now he doesn't love them any more. Then he thought he would go to Hendon and see the arrival of the "Circuit Européen." Politely alighting in a field close by, he requested permission to enter the aerodrome in flight, but was at once told that that would never do. After this rebuff he decided to fly to Eastchurch. Unfortunately his petrol pipe broke and let him down, so he took the train instead rather than miss any of the G.-B.

After that he wandered back to Brooklands, and the last we've heard of him is that he went for a flight one morning and suddenly found this machine in flames. He at once alighted near a sandpit, and he and his passenger put out the fire before much damage was done. Neither was hurt, as the engine is situated behind them; had it been in front no doubt they would both have been burnt to death. [If the engine had been in front and properly arranged it would not have caught fire. Of course, if the tank is in front of the engine, any leak is blown back on to the flaming open exhausts.—E.D.]

Lieut. Reynolds has been sharing Lieut. Barrington Kennett's machine, as his own was not delivered till last Sunday. This is the Bristol with the Renault engine. This machine is a couple of months overdue, and its fellow is not ready yet. Létaud took it for half an hour's flight on Sunday, and delivery was taken. Reynolds has not been altogether happy with it: the engine causes him considerable trouble, but at the present moment he has got most of the cylinders running, and in any case he seems to be able to cut out two or three and still fly, but the noise is neither soothing nor comforting. However, he took up a couple of passengers yesterday, and carried them all right.

It is rather early to offer any criticism on the machine, or to make any definite statement as to its speed. When it runs with all cylinders firing we shall be better able to gauge its capacities.

Lieut. Reynolds and Lieut. Conner have been flying the Howard-Wright, but on Saturday, when Reynolds was having his turn, one of the cylinders fell out with the crank case. The crank case got the worst of it, and the cylinder was so pleased that it stood up on the top of the piston. Reynolds is also pleased because he didn't get hurt, and Conner is still more pleased because it was Reynolds and not he.

Lieut. Cammell has been over to Winchester to test his compass. Apart from that he has contented himself with practice over the Plain at a height of a couple of thousand, and with making his plans for the "Circuit." We all wish him the best of luck and a safe return home.

Captain Burke is another of the Army pilots who won't stay at home. Since his Oxford trip he has been to Farnborough: he has been there for a week. When he was at Farnborough he did nothing but abuse it; now he abuses it a good deal more. All the same, he seems pretty fond of going there.

After he had been there a day or two his engine refused to go; after a great deal of worry and work he extracted a cockchafer from his petrol pipe. All mishaps which occur at Farnborough are to be put down either to the Balloon Section or the Air Factory. The question is which is responsible for the cockchafer.

Captain Burke returned on Friday evening, and on his way passed Lieut. Conner on Captain Fulton's machine outward bound for Farnborough. When last seen Conner was going strong at 1,000, and Burke reports having seen him at 2,000. This is Conner's first cross-country flight, for as may be remembered he was not taken on by the War Office till quite recently, and there is no machine definitely allotted to him. It is to be hoped he has had good luck and reached Farnborough safely.

Captain May has been away with Burke as observer, and is waiting with rapidly decreasing patience for the delivery of the other Renault-Bristol. Captain Fulton returned last Saturday from his labours as *Commissaire Sportif* on the "Circuit Européen." His comments on the "Circuit" and on the life of a *Commissaire* were considered as fairly comprehensive till Mr. Cockburn—his fellow *Commissaire*—arrived from Paris. That usually reticent man is absolutely loquacious.

Capt. Fulton and Lieut. Conner have been out every day this week, both morning and evening, on the former's machine. Nothing sensational has been indulged in, but both have been working very hard. Owing to Captain Fulton's efforts, two spare engines have been obtained for the battalion. These were badly needed, but now delays from faulty engines are a thing of the past, as far as the Gnômes are concerned, at any rate.

#### THE ALEXANDER PRIZE ENTRIES.

The entries for the Alexander £1,000 prize for aeroplane motors are now closed, and the following entries are to hand:—

1. W. L. Adams, Bournemouth.
2. The Aero-Flight Engine Co.
3. The E.N.V. Motor Syndicate, Ltd., London.
4. The Green Engine Co., London.
5. The Isaacson Radial Engine Co., Ltd., Leeds.
6. The New Engine Motor Co., Ltd., London.
7. The Requa Motor Co., of New York, U.S.A.

The engines are required to be delivered for test at the Army Aircraft Factory, Farnborough, on or before September 30th, 1911. The test will be made there under the supervision of officials from the National Physical Laboratory at Teddington, and so far as one can gather the testing-place has been transferred to the Aircraft Factory, because some of the apparatus from Teddington has been moved there. The idea is not a bad one, for the testing of engines at Farnborough may have considerable educative influence on the employees there, and as each engine manufacturer will be in charge of the tests of his own engine no mistakes are likely.

The competition is open to engines between 40 and 75 h.p., and any motor which does not average at least 40 b.h.p. throughout the two twelve-hour runs will be disqualified. Motors must not weigh more than 8.5 lbs. per b.h.p., which b.h.p. will be taken to be that declared by the maker, and the weight will include the cooling apparatus, including supply of water for a twelve-hour run and any additional containing vessel for water, but not including petrol and oil.

The points which will be considered in the award will be:—(a) Gross weight per measured b.h.p.; (b) reliability and steadiness of running; (c) wear of working parts.

(a) Will be taken from the average b.h.p. determined from measurements taken throughout the two twelve-hour runs. Any engine in which the average b.h.p. is less than the



Loraine and Ferman discussing the Farman Racer.



declared b.h.p. by more than 10 per cent. will be disqualified. The motor will be tested by two runs of twelve hours each exclusive of stoppages. The second run will be on the day following the first, or on the next convenient day. No attention to the motor will be permitted between the two runs.

Further technical information may be had from the Secretary, The Advisory Committee for Aeronautics, Bushy House, Teddington, who will be pleased to send copies of the regulations to readers of THE AEROPLANE.

### The Visitors' List.

Among the visitors to THE AEROPLANE offices during the past week were several of those who are making aviatc history.

Captain Bertram Dickson, just returning to Paris after a visit to Bristol, is looking very much better than he was at the Aero Show, and should before long be quite himself again. He reports considerable interest in the Bristol machines on the Continent, and is sanguine about the Bristols in the "Circuit."

Mr. Armstrong Drexel, also looking much better, made a flight from Beaulieu over the Solent and Isle of Wight last Sunday week. The flight was an uncommonly good one, and deserved to have been noted at the time, only Mr. Drexel had his own reasons for keeping it quiet at the moment. He has not been particularly well lately, probably owing to his not having been flying, but more will be heard of him soon.

Mr. Ewen, of the Lanark Aerodrome, called with Mr. Lewis Turner, formerly of the Graham-White school at Hendon, and reported that things were going very well at his aerodrome. He has several pupils at work who are making good progress, and the general prospects in Scotland are distinctly good, especially among army men. He is booked to give several demonstration flights in Scotland during the "Circuit."

Mr. Gustav Hamel, who appears now to be little the worse for his smash at Eastchurch, said that he had an excellent reception flying at Lord Norton's place near Birmingham on Wednesday of last week, where he made two flights. He is very busy tuning up his Blériot for the "Circuit."

Mr. Herbert Thomas, as usual tearing about the country at express speed on business connected with the Bristol team in the "Circuit," found time to report that the new type Bristol biplanes and monoplanes were doing very well under test. He said that Gilmour took his "Circuit" racer out on Friday last from the little testing ground at Filton, and flew it as if he had been driving the same machine for weeks, also that Prier, on the new monoplane, had already taken it up to a height of 2,000 feet and had flown it for about two hours.

Mr. Willows, much pleased at winning his law case against the Aerial Manufacturing Company of Great Britain and

Ireland, Ltd., unfolded some of his plans concerning dirigibles and possible aeroplanes to be turned out by E. T. Willows Ltd.

Lieut. Watkins, fresh from watching the tests of the new Vickers Monoplane No. 1, reported that the machine flew excellently at a height of about 300 ft. with Captain Wood at the helm, and that the machine is extremely fast and stable.

Mr. Norman, of the Barrhead School, near Glasgow, reported that work was progressing steadily, and prospects were good.

Mr. G. B. Cockburn, glad to be back from the "European Circuit," related sorrowfully the demise of the "Father of All Farman's," which is now being laid peacefully to rest in his shed on The Plain, while at the same time a smaller and faster machine is rising phoenix-like from the remains.

Mr. E. de B. Whittaker, up from Eastchurch, reported that his Farman with a 60 h.p. Green is now practically ready for work, and that the other inhabitants of the Royal Aero Club grounds are anxiously awaiting the results of his first landing, as there seems to be an opinion that a bomb proof dug-out will be the safest place for the onlookers.

Mr. Herbert Spottiswoode, just back from Italy, is making arrangements to follow the "Circuit," as special transport officer for Mr. Harold Perrin of the Royal Aero Club.

THE AEROPLANE office is rapidly becoming a regular rendezvous for those who are most active in aviation.

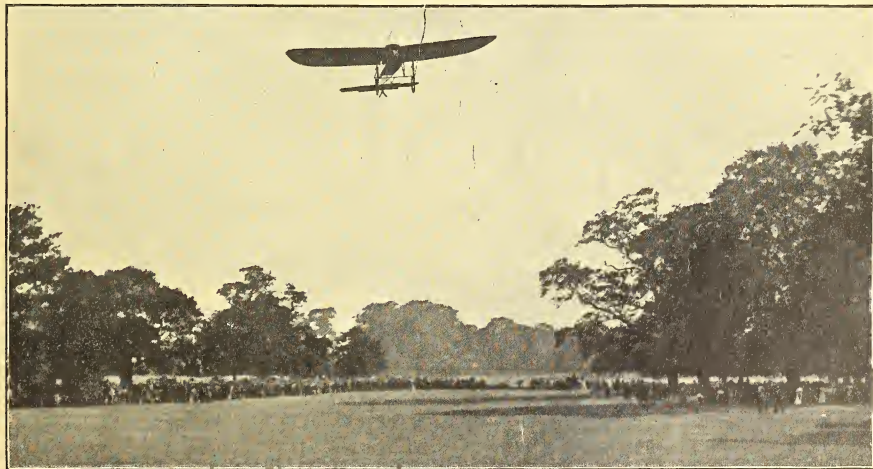
### Filey to Scarborough and Back by Night.

Between 10 and 11 o'clock at night on June 10th B. C. Hucks, one of the Blackburn pilots in "The Circuit," flew from Filey to Scarborough and back by moonlight.

Leaving Filey Sands at 10.10 p.m. Hucks made for Scarborough. Everything went well on the journey outward, which was done in seven minutes. He circled round the bay twice, and then started for home. He steered for what is known as Cayton Hole, but although the night was so clear he missed his way, and when he thought he was making for Filey he found, fifteen minutes after leaving Scarborough, that he was flying over Bridlington. He could see the flash of the lighthouse at Flamborough, and taking this for his guide he headed for Filey. When within four miles of his shed one of the cylinders missed fire, and he came down very low over a field of corn. Luckily his engine restarted, and ten minutes later, without any further mishap, he landed on Filey Sands at 10.55 p.m., having been in the air 45 minutes, and having covered a distance of 40 miles.

### The New Long Distance Record.

On Monday, the 17th, at Brussels, Jan Olleslagers on a Blériot, beat the world's long distance record, covering 388½ miles in 7 hrs. 18m. 26secs. The previous record was 363½ miles, held by Tabuteau on a Maurice Farman.



Hamel on his "Blériot" flying at Hams Hall, near Birmingham, on Wednesday last week.

Photo by E. J. Pardoe, Handswoth.

### Wanted a Sportsman.

If any sportsman who owns a fast car would like to take a hand in the "Circuit," THE AEROPLANE can put him in touch with a constructor who wants an extra car to carry mechanics and spares. The work will be hard and rough, but it carries with it the sport of being "in the swim" of the big race, and the free run of all the controls and aerodromes along the route.

### A New Biplane for the Army.

The War Office has just purchased through the English agents, A. Turner and Co., Ltd., of Piccadilly, a Bréguet biplane of the three-seated "cruiser" type. This machine has won distinction in various trials, and has been ordered in considerable numbers for the French and Russian armies. It holds the weight-carrying record and the biplane speed record. It is characterised by an absence of bracing wires, and is constructed largely of steel. The motor used is, generally, a 60-h.p. Renault, but R.E.P.'s and Canton-Unnès have also been used with great success on the Bréguet. While by no means an advocate of the purchase of foreign machines by the British Government while our own manufacturers are starving for orders, yet this order deserves commendation, for the machine is a departure from the dangerous engine-behind type of biplane, and it embodies many interesting points of construction. The chassis is somewhat clumsy, but otherwise the machine is highly efficient.

### A British Chauviere.

Mr. Narraway, of G. W. Goodchild and Partner, informs THE AEROPLANE that beside the propellers produced by M. Chauvière's factory in France, his firm is selling a British made Chauvière propeller, made to exactly the same designs, which sells at a considerably lower price than the French propellers. These are worth investigating.

### For Reliable Work.

A firm which now calls for considerable attention as producers of aeroplanes is Mulliner (Long Acre, London, and Northampton), Limited, whose works are situated at Vardens Road, Clapham Junction, S.W., only two minutes from Clapham Junction Station. The main shop has a floor space of over 14,000 square feet. As it has plenty of light and a hard wood level floor it is eminently suitable for an erecting shop for aeroplanes.

The works, which are now under the charge of Mr. A. G. Leeper, who is well known as the former assistant to the late Hon. Chas. Rolls, have just completed a large monoplane from which good results are expected. They have also recently fitted a 50 h.p. Isaacson engine into a monoplane of the

Bleriot type for a well-known aviator, and Mr. Leeper tells THE AEROPLANE that, judging by the way it has been turning a propeller of 8 feet 6 inch diameter by 7 feet pitch it ought to be capable of doing really big things. The Works Manager will be most pleased to show visitors round the works, provided the said visitors are really interested in aviation, and, knowing the class of work turned out by the firm, THE AEROPLANE can vouch for the fact that the works are worth visiting.

### More Opinions.

**F. Conway Jenkins (Certificated Pilot):** "As regards your paper, my remarks upon it would undoubtedly be superfluous, but I can at least say that in my opinion it is the 'last word' in aeronautical journalism."

**H. G. Ferguson, Esq. (Ireland's Only Aviator):** "I do not miss reading a word from the first page to the last. The account of the Gordon-Bennett Race was magnificent, and the details you bring out are the finest of reading."

**Stuart A. Hirst, Esq. (Chairman of the Yorkshire Aero Club):** "I hope your paper is proving the huge success it deserves."

**A. Lawrence, Esq., Birmingham:** "Accept my congratulations on the success of your paper."

**Alfred and Alan Curtis write:**—"We take this opportunity of congratulating you heartily on your excellent weekly. Yours is the first British weekly to have its front picture on the cover, a feature which will undoubtedly attract even the mere casual observer. The general 'get-up' and the appearance of THE AEROPLANE is interesting to the 'man in the street' and the paper most closely in touch with flying alike. Particularly do we appreciate 'Air Currents,' 'Our Aviators,' and the scale drawings, all of which we hope will be continued. Wishing you increasing and deserved success."

### Coming Events.

#### AEROPLANE COMPETITIONS.

July 22.—Start of *Daily Mail* "Circuit of Britain" from Brooklands.

" 24.—Circuit of Britain leaves Hendon.

July 29.—Aug. 6.—French Grand Prix.

Aug. 5.—Latest time for Finish of "Circuit of Britain."

" 5-21.—Circuit of Belgium.

Sept. —.—Paris-Bordeaux-Paris.

Oct. —.—French Military Competition (1,200,000 fr.).

" 31.—Last day for British Michelin Cup Flights.

Dec. 8-25.—Paris Aero Show.

#### MODEL COMPETITIONS.

Aug. 12.—Kite and Model-Aeroplane Association Gamage Cup.

" 20.—Kite and Model-Aeroplane Association Self-Launching Models, North Ealing.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address AILEROS, London.

Telephone: Mayfair 5407

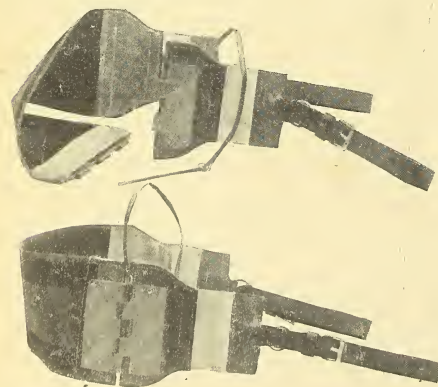
### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
	s.	d.			s.	d.	
3 months, post free	1	8	3 months, post free	2	9		
6 " " "	3	3	6 " " "	5	6		
12 " " "	6	6	12 " " "	11	0		

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.



The "Birdling" Belt for Aviators, recently put on the market by the Universal Aviation Co., Ltd. By snatching at the leather thong at the side, the pin is withdrawn and the belt releases as shown in the upper photograph. The white portions are elastic, the sides leather with a steel clasp, and the front is stout horse-girthing.

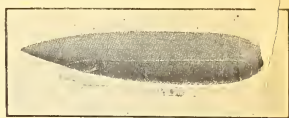


# E. T. WILLOWS · L<sup>TD</sup>

## AERONAUTICAL ENGINEERS

### SPECIALITY: WILLOWS' DIRIGIBLES

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



**"CIRCUIT OF BRITAIN."**—100 H.P. 6 Cylinder Car for sale. Just overhauled. Fine condition. Can beat 90 miles an hour. Just the thing for Royal Aero Club Officials, Aviators' Assistants, Volunteer Ambulance Corps and other "Circuit Chasers." Apply Box 322, THE AEROPLANE.

**50** H.P. ALVASTON for sale, perfect condition, fresh from makers; replacing by more powerful type; price £95.—MALLOW & Co., ADELPHI HOUSE, 71/72, STRAND, LONDON, W.C.

**A** RESPONSIBLE position is vacant in an old-established firm of Aeronautical Engineers with flying grounds, machines, and several valuable patents. Salary, £200 to £300 per annum, according to investment. Strictest investigations. Solicitor's or Banker's reference required.—Write MALLOW & Co., ADELPHI HOUSE, STRAND, W.C.

**35** H.P. GREEN AERIAL MOTOR, latest make, new, identical with 24-hour non-stop engine, price £200. Fitted in Dirigible, or Aeroplane, £500 complete.—C. G. SPENCER & SONS, 56a, Highbury Grove, London, N.

**A**EROPLANE CLOTH. Spencer's Balloon Fabric. Best and Cheapest. Width 44 inches. Length 60 yards per piece. Price 1/- per yard Unproofed, 1/6 per yard Waterproofed. Delivery from Stock. Used on many well-known Machines.—C. G. SPENCER & SONS, 56a, Highbury Grove, London, N.

**"British Circuit" for Daily Mail Prize.**  
**Edinburgh Hydropathic.**

Five minutes' walk from Redford Barracks, Colinton, where the machines will alight.

... THE ...  
**Beney Propeller.**

SIZES FOR STANDARD  
MACHINES KEPT IN STOCK.

Particulars and Prices from—

**ROBERT BENEY & CO.,**

7, CARLISLE STREET, W.

**L**ANARK AERODROME, Lanark, N.B.—Tuition by Certificated Aviator on genuine Blériot Monoplanes: Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, HOPE STREET, GLASGOW, OR BARRHEAD.

**P**ROPELLERS. — "Avro" Propellers of proved efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines.—A. V. ROE & Co., BROWNSFIELD MILLS, MANCHESTER.

**M**ACHINES.—"Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., BROWNSFIELD MILLS, MANCHESTER.

**T**UITION.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. See news columns.—A. V. ROE & Co., BROWNSFIELD MILLS, MANCHESTER.

**W**ANTED, immediately, volunteer assistance to help experiment with aero-hydroplane on South Coast. Apply PIFFARD, Lifeboat House, Shoreham Beach.

**B**LERIOT cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

## CLIFT AERO MAPS

For Daily Mail "CIRCUIT OF BRITAIN"

and all Cross-country flights.

Clift Maps were used by Vidart, Kimmerling, Valentine and others in the European Circuit.

## Clift Aero Compasses

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators.

Necessities for the

**"CIRCUIT of ANYWHERE"**

For terms, write—

Eric Clift, c/o "The Aeroplane," 166, Piccadilly, W.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, JULY 20th, 1911

No. 7.

## THE British & Colonial Aeroplane Co., Ltd.

Telegrams:—"Aviation, Bristol."

BRISTOL, ENG.

Telephones:—2 P.O.  
74 & 3074 National.

### The "BRISTOL" AEROPLANES

in the

#### "DAILY MAIL" CIRCUIT

are THE NEW TYPE "BRISTOL" BIPLANE and  
THE NEW "BRISTOL" MONOPLANE.

Both Machines possess the qualities with which the name "BRISTOL" is synonymous, viz.,

#### RELIABILITY AND STRENGTH,

and, in addition, have the important quality of

#### GREAT SPEED.

"BRISTOL" Aeroplanes are  
British-built, and are used through-  
out the British Empire.

#### TABUTEAU

used the same "Bristol" Biplane  
throughout the European Circuit.

They are used by the British  
War Office and by the Russian  
Government.

#### Learn to Fly on

a "BRISTOL."

Aviation is the most fascinating sport.

The best way to qualify as an Aviator is to join

THE "BRISTOL" SCHOOLS at Salisbury Plain and Brooklands,  
which offer you THE QUICKEST WAY TO PROFICIENCY

BECAUSE:

They each have a permanent staff of Tutors, drawn from the ranks of the most notable Aviators of the day, who give personal attention to EACH PUPIL.

They are so fully equipped with machines that there is NO WAITING in the event of a smash.

The equipment consists of "BRISTOL" machines with Gnome engines, which are the EASIEST, as well as the SAFEST, for either the Expert or the Novice to fly.

Special Terms to Navy and Army Officers.

"THE AEROPLANE," JULY 27, 1911.

# THE AEROPLANE

12  
WEEKLY

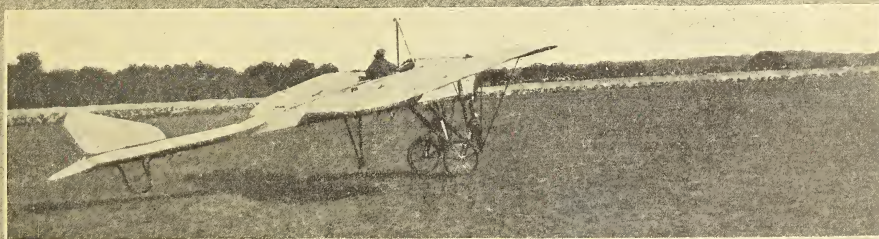
Edited by CHAS. G. GREY. ("Aero-Amateur")

Vol. I.]

THURSDAY, JULY 27th, 1911.

No. 8

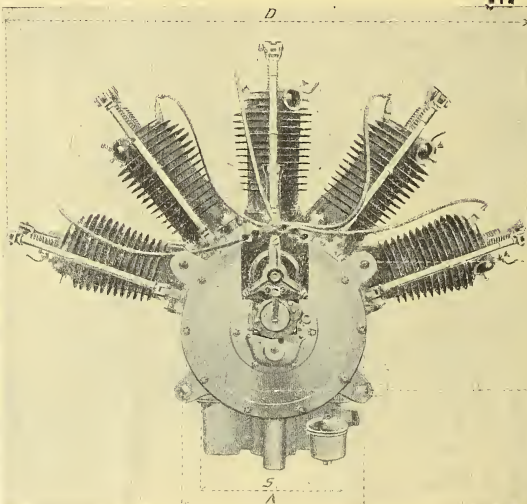
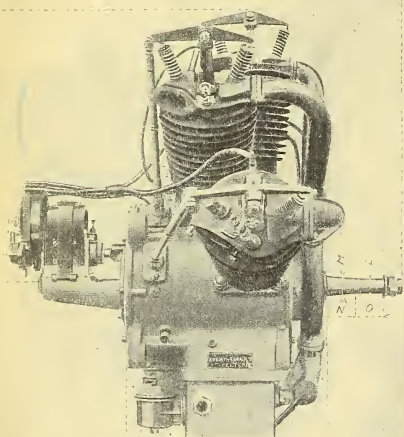
## British Starters in the "Circuit."



Top :—H. J. D. Astley on the "Birdling." Middle left :—Hamel ; right :—Valentine.  
Below :—Lieut. Cammell on the Blériot two-seater.



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40/50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

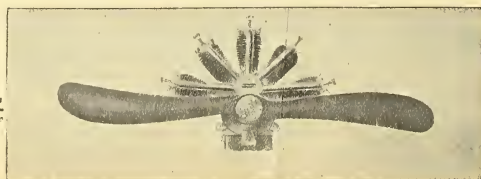
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	7.1"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	.79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS	171	THE START OF THE CIRCUIT	178
AEROPLANES IN THE HOUSE OF COMMONS	175	THE CIRCUIT AT HENDON	182
AIR CURRENTS	176	THE WEEK'S WORK	186

## Editorial Opinions.

Elsewhere will be found a report from *The Times* of the questions asked in the House last week concerning military aeroplanes. The answers show that, at any rate, steps are being made in the right direction.

Briefly put, the position is this: (a) The War Office is contemplating offering a prize or prizes for aeroplanes suitable for military use. (b) The Army Council has come to the conclusion that eighty to a hundred officer aviators are required, and that a number of these must be trained in the civilian schools, as the one on Salisbury Plain is not big enough at present to train them all in reasonable time. (c) A number of mechanics with knowledge of aeroplane work will be enlisted as privates in the Air Battalion. (d) Air Battalion officers will receive engineer pay. (e) Special allowances will be made to officers and men injured while engaged on aeroplane work. (f) More aeroplanes will shortly be bought. (g) Accommodation for four more aeroplanes will shortly be put up on Salisbury Plain.

Taking all these points together it should mean that the whole sport and industry will take a distinct turn for the better during the next month or two. The first thing that will happen will be that the various flying schools in the country will receive an influx of pupils from among the various officers who wish to qualify for their pilots' certificates.

About October last, in another place, the writer strongly advocated the training of officers in civilian schools, and more recently he again advanced the same ideas in *The World*. It is, therefore, the more satisfactory to find that the idea has been taken up to the extent promised. It is practically certain that by the time a hundred officers possess their certificates the War Office will be convinced of the necessity of training another hundred or two, for in the next twelve months the growth of aviation in Continental armies will show the necessity for much nearer a thousand officer aviators than a hundred.

Probably before many of these officers have obtained their certificates the War Office will have decided on the points required in military aeroplanes, and will have offered the prize mentioned in section (b) for competition. This will immediately be followed by intense activity among the manufacturing firms who are out to compete for

that prize, and there should then be no difficulty in obtaining from outside sources the additional capital necessary to enable some of the smaller, but none the less successful, constructors of aeroplanes to develop their businesses.

This activity will, of course, mean employment for a very large number of civilian mechanics in the constructors' factories and in the schools where the officers are being trained, and no doubt many of the mechanics who have already acquired a certain amount of experience will enlist in the Air Battalion, so making room for fresh hands to join the factories. Builders of aeroplane sheds and workshops will find work waiting for them, and in short the whole industry will become really active.

It is certainly somewhat strange that, in answering Mr. Sandys' supplementary question as to the size of the establishment at present, Colonel Seely should have said that there are only six officers and four machines on Salisbury Plain, for it will be seen that no mention is made of Captain Massy nor of the Howard-Wright which Mr. Conner has been flying.

It might have been well also, under the circumstances, to have included Mr. Cammell's own Blériot two-seater, for it and the Howard-Wright have been doing quite a large amount of work lately.

It is to be feared that the War Office officials whose duty it is to supply the Secretary of State with information on these subjects are not themselves fully conversant with the state of affairs.

*A propos* of this point, the writer is reminded of a certain officer who applied at the War Office for permission to use a Government shed for his own machine, and was told by the official in charge that the Government could not go to the expense of putting up a shed for him. He replied that he did not want them to do so; he merely wanted to use one of the sheds which at that time was standing empty, and the War Office official was quite surprised to hear that such things as aeroplane sheds actually existed on Salisbury Plain. Under such circumstances, of course, one can hardly expect absolute accuracy in these replies.

Up to the present twenty-three officers have taken their certificates. Of these three are no longer on the active list, so that we have at present twenty officers possessing pilots' certificates. These are:—

## A Prize for Manufacturers

## Officers with Certificates.

- |                                     |   |
|-------------------------------------|---|
| 17. Capt. G. W. Dawes               | 84. Capt. S. D. Massy                   |
| 27. Capt. J. D. B. Fulton, R.A.     | 88. Capt. T. C. R. Higgins              |
| 29. Lieut. R. T. Snowden-Smith      | 89. Lieut. W. D. Beatty, R.E.           |
|                                     | 92. Lieut. H. R. P. Reynolds, R.E.      |
| 36. Capt. A. G. Board               | 93. Lieut. T. H. Sebag-Monteifore, R.E. |
| 37. Capt. A. F. Wood                | 95. Capt. F. H. Sykes                   |
| 40. Lieut. G. B. Hynes, R.G.A.      | 98. Lieut. J. W. Pepper, R.A.           |
| 42. Major H. R. Cook, R.G.A.        | 105. Lieut. T. Gerard Hetherington      |
| 43. Lieut. B. H. Barrington-Kennett | 108. Capt. Brooke-Popham                |
| 45. Lieut. R. A. Cammell, R.E.      |   |
| 83. Lieut. C. H. Marks              |   |

And in addition there is Captain Burke, who holds a French certificate.

It is to be hoped that when it is decided what sum is to be given as a grant to officers obtaining their certificates at civilian schools that grant will be made retrospective, so that the twenty officers who have obtained their certificates at their own expense may be reimbursed for their outlay, and so placed on an equality with those who will in the future be trained at Government expense.

As to the type of machine needed for Army use, it is obvious that it must be fast, stable, and strong.

The average machine used both here and abroad for military purposes is neither one nor other of these three. The minimum speed of a military machine must be 60 m.p.h. It must be capable of carrying at least a passenger and a pilot; the chassis must be strong enough to land on rough ground without breaking up, and it must be so arranged that the machine will not stand on its head if it happens to run into a bank two or three feet high.

The engine must be in front, so that in the event of a really bad smash the pilot and passenger will not be crushed by the engine, and it must be sufficiently stable to be able to fly in a gusty wind of at least 30 m.p.h. without depending entirely on the strength and skill of the pilot to keep it approximately on an even keel.

Necessarily both the pilot and his passenger must have a clear view in front of and below them, so that the ordinary type of machine in which the engine and tanks obscure the view will be ruled out at once.

Without going into details of design, one can point out that a machine fulfilling all these conditions can be built quite easily. It may be either a monoplane

or a biplane, but it is fairly certain that it must have a non-lifting tail. It must have long and upward-projecting skids. The engine must be placed low down in front, so that the pilot and passenger can see over the top of it, and comparatively straight down over it.

For general efficiency and for the convenience of both passenger and pilot, it would be better if it were fitted with either one or two geared down propellers instead of tractors, but there are also great and not yet fully understood advantages in geared down tractor screws, placed well out on each side of the centre, where the draught does not affect the driver.

In short, the military aeroplane of a few months hence must be quite a different thing from anything we have got at the present moment, and the sooner the Government makes it worth the constructors' while to produce it the better for everybody concerned.

*A propos* of the article from *The Evening Times* quoted in *THE AEROPLANE* last week, a letter has been received from Mr. Graham

Gilmour in which he says, "I think, with Morison and Spottiswoode, that it is quite disgraceful that the French, who are our guests, should be so libelled." Mr. Gilmour goes on to say that if the person who wrote that particular article would care to have practical experience of aviation himself he will be extremely pleased to take him for a flight as a passenger. This invitation has been passed on to the editor of *The Evening Times*, and if the writer of the article in question or the editor of the paper really wishes to see whether nerve, brain, and muscle are needed to drive an aeroplane, he now has an unsurpassable opportunity of doing so. It is to be hoped that, after his criticisms, the writer of that article will show that he, at any rate, possesses some of the pluck which he denies to the foreign aviators, and will show that he is man enough to back his own opinions to the extent of accepting Mr. Gilmour's very sporting invitation.

[AS *THE AEROPLANE* goes to press, the editor of *The Evening Times* writes that one of his staff will be glad to accept Mr. Gilmour's invitation. It is not stated definitely whether he is the author of the article or not, but even if he is not, it will be as well that someone should make vicarious atonement for the article. He is certain of a highly educative flight.]



The great Etich Monoplane waiting to start its trial flight at Brooklands on Saturday. It takes twenty men to hold it against the pull of the screw when the engine is going well.

# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz.:

35 h.p.	*60 h.p.	100 h.p.
---------	----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESSEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

## HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



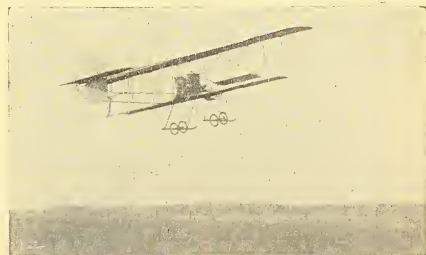
Eight Types

### Monoplanes

From **40** to **80** miles per hour

### Biplanes

From **36** to **50** miles per hour.



Catalogue on Application.

Winner of De Forest Prize.



# *The* **UNIVERSAL AVIATION CO., LTD.,**

*Supply Aeroplanes and all Accessories for them*

## **MONOPLANES OR BIPLANES.**

Engines and Propellers.

Timber, Steel Tube and Fabric.

Aluminium in Sheet or Castings.

Petrol and Oil Tanks and all  
other engine fittings.

Landing Wheels and Skids.

---

**THE BEST & LATEST MAPS & INSTRUMENTS  
FOR CROSS-COUNTRY WORK.**

---

## **Aviators' Safety Belts & Helmets.**

Bolts, nuts, wire, strainers,  
eyebolts, etc. Tools of all kinds  
by the best makers.

---

*Address :—***166, Piccadilly, W.**

Telephone: 3407 Mayfair.

Telegraphic: "Birdling," London.

## Military Aeroplanes in the House.

MR. LEE (Hants, Fareham, Opp.) asked the Under-Secretary for War whether he could now state what steps the War Office had taken, or were proposing to take, to develop the use of the aeroplane for military purposes, particularly with regard to the following points: The training of officers and men as aviators at civilian schools, the enlistment and training of an adequate corps of aeroplane mechanics, the adequate remuneration of officers and men employed in this hazardous service, and the offering of prizes and other inducements to civilian manufacturers who were prepared to design and construct special aeroplanes in accordance with War Office specifications and requirements.

COLONEL SEELY (Derbyshire, Ilkeston, Min.): The question of offering a prize or prizes for aeroplanes suitable for military use is receiving careful consideration, but there are difficulties to be overcome, and I am not yet in a position to make a statement on this point. The Army Council has been carefully considering the numbers of trained observers necessary for our present war requirements, and has come to the conclusion that 80 to 100 officers who are also pilots are required. As our present arrangements do not admit of opportunities for training so large a number, the Army Council is in communication with the various civilian schools of aviation in regard to the training of selected officers and the terms they would consider sufficient; and it is proposed to make a grant in aid of the expenses of such training. When these officers have obtained their pilot's certificate and been finally approved by the military authorities as skilled airmen they will be classed as Army airmen, and a distinguishing mark will be placed opposite their name in the Army List. They will be attached to the Air Battalion for refresher courses at specified intervals. The training of so large a number will necessarily take some time, but a commencement will be made with the least possible delay. A considerable number of mechanics with special knowledge will eventually be necessary, and they will be enlisted as required. As regards remuneration, officers of the Air Battalion and aviator officers when attached will receive Engineer pay in addition to regimental pay, and it is proposed to give such further pay or allowances as will, in the opinion of the Army Council, make the total remuneration adequate. The Army Council is in communication with the Admiralty and the Treasury as to this, and I hope to be able

shortly to make a further statement. The question of the grant of special non-effective allowances to officers and men in cases of accident when engaged in aviation is under consideration.

MR. LEE: May I ask with regard to the first point whether, while the War Office is considering and making up its mind about the special features of an ideal aeroplane, they will consider the desirability of purchasing an adequate number of machines of such type as has been proved to be thoroughly suited to military requirements by foreign countries who have more experience than we have on these matters?

COLONEL SEELY: We have recently purchased some more aeroplanes, and will continue to do so as and when they are required; but the advance in this science is so rapid that to buy up a large number would be a great mistake.

MR. LEE: May I ask whether steps are being taken to train officers simply as observers, apart from the expensive course of making them pilots?

COLONEL SEELY: As I explained in my reply, there has been a proposal that from 80 to 100 officers shall be trained as pilots. Of course, their principal purpose will be to observe, but they will also be pilots.

In reply to Mr. Sandys (Somerset, Wells, Opp.),

COLONEL SEELY said: There are five sheds now on Salisbury Plain belonging to the Army, and they will hold seven aeroplanes. Another double shed to hold four aeroplanes will shortly be built.

Answering a further question put by Mr. Sandys,

COLONEL SEELY said: There are three qualified aeroplane mechanics at Salisbury Plain, and another will shortly be sent there. There are two more at Farnborough on probation.

MR. SANDYS asked for the names of the five officers officially stated to be engaged in aeroplane work on Salisbury Plain and the kind of aeroplanes in use.

COLONEL SEELY: There are six officers of the Air Battalion engaged on aeroplane work on Salisbury Plain, viz. Captains Fulton and Burke, and Lieutenants Cammell, Reynolds, Barrington-Kennett, and Conner. The aeroplanes there are one Farman biplane and three Bristol biplanes. Two more Bristol biplanes are to be delivered there this week and another in three weeks' time.

## The Liverpool to Manchester Flight.

MR. H. G. Melly, of Liverpool, described his experiences to a representative of the *Liverpool Daily Post* on his return to Waterloo from Manchester.

"My flight to Manchester," he said, "was not resolved upon until the forenoon. As soon as I made up my mind to start, and to take with me my pupil, Mr. Dukinfield Jones, I telephoned to an aviator friend (Mr. H. V. Roe) in Manchester, some fifteen minutes' motor ride from Trafford Park. Each took a map in hand, and we agreed upon the exact place where it was most desirable to land. Mr. Roe promised to indicate the place by waving two large white sheets as a signal when I came in sight, and then to lay the sheets flat on the ground as a guide to the landing place."

"It was about 11.45 a.m. when my companion and myself started, and our stop watch showed that we were only 40 mins. on the outward journey. That was but 45 mins. since the conference on the telephone. So short was the time given to my Manchester friend that he feared we might reach the ground before he had time to place the sheets with which he and his partner dashed up on bicycles very shortly before we reached Trafford Park. We saw them waving what looked like a couple of pocket handkerchiefs, and after a sharp turn our machine by a spiral *vol plane* came splendidly to earth within a short distance of the spot marked by the sheets."

### Uneventful Start.

"Our start, which was witnessed by my wife—the first lady, by the way, to ascend in a monoplane in the Liverpool district—was uneventful. We soon rose to a height of 1,500 ft., and proceeded *via* Aintree, Prescott, and Earlstown, until we slanted for the Ship Canal and Trafford Park. At several stages of the journey we were lost for about three minutes at a time, before we could pick up some such landmark as a tower, Run-corn Bridge, or the Ship Canal. Still, we must have kept the course pretty closely, or the forty miles would not have been covered in 40 mins. Our height all the way was practically 1,500 ft., and the flying proved fairly easy."

"We were received at Trafford Park very kindly and hospitably. Besides my two friends, who had made a record of

their own by bringing and placing the signal sheets, there were present a well-known Manchester journalist, who had happened to be in their office when I telephoned, and all the golfers from the adjacent links. They had cried off golf for a few hours on learning of the approach of the Blériot, and they insisted that we must take lunch with them at their clubhouse. Such was their hospitality that our return journey became somewhat delayed."

### An Ovation.

"We had a good send-off on leaving for Liverpool, for not only did the golfers come to see us start, but the men employed at the large cable works near Trafford Park were given, or took, a holiday."

"The wind was against us on the return journey, but by rising to a height of 2,300 ft. we minimised the difficulties. Mossley Hill Church, a prominent landmark, was one of our guide posts, but at a height of 2,300 ft. it looked to me so tiny that I could have doubted its identity. Never had I seen a church look so small. When we came over the Mersey, near St. Michael's-in-the-Hamlet, the way home was clear, and we noticed that we were sighted at the Landing Stage. After passing the Liver Buildings, we were about 1,500 ft. high as we flew over Scaforth. Then, on nearing the hangar, we planned down and alighted in the presence of a large crowd. A brother aviator, Mr. King, had motored over from Freshfield to meet us and join in a neighbourly greeting."

Mr. Melly, it may be added, is a member of a well-known Liverpool family, and he was for several years an officer in the Mersey corps of Submarine Engineers, who were virtually the pioneers of the Territorial Army. He is a brother of Colonel Melly and of a leading lady worker for the cause of education.

### Radley's Venture.

The new Radley monoplane, with gull-wing planes, has made its first appearance on the Portholme at Huntingdon, and, with James Radley on board, lifted quite satisfactorily at the first attempt. There are, however, several small adjustments to be made, so further trials are postponed till after the "Circuit."

## AIR CURRENTS.

## Tales of Terror for Credulous Cloudmen.

A short while ago subscribers to the *Daily Mail* were struck white to the lips by reading one morning of how a young Roumanian girl had been stabbed to death in a balloon by a rejected lover driven mad by jealousy.

In the interests of our readers, and deliberately shutting our eyes to the expense, we have lost no time in cabling our various representatives in every corner of the globe, eagerly requesting news of similar tales of blood and passion (if any).

"Perhaps one of the most sinister episodes ever recorded in the annals of airmanship was enacted early yesterday morning at Pittville, Pa., N.Z.," cables our New York correspondent. "As Mr. Yakman B. Honks, the chemical manure king, with his son Hermon, was returning from the thanksgiving service held in celebration of a new penitentiary erected in that city, an unknown black-bearded airman swooped suddenly down, and before the onlookers could recover from their indignation, had seized young Honks by the short hairs, and, rising rapidly with his burden, was soon lost to view in the distant haze. Mr. Yakman B. Honks is prostrated with grief, and it is feared that agony will set in."

(Later.) "It is understood that Mr. Honks refuses resolutely to pay one single cent towards ransom, but is prepared to supply his son's captors with seven tons of his best sterling chemical manure at one-half the trade rates for the safe return of his offspring."

Telephoning at a late hour yesterday evening from Nzwickskrikze, Northern Hungary, our representative, swivelling with emotion, states:—"I feel I must ring you up and tell you of a grim drama of revenge which has cast a blight over the entire city. It appears that the beautiful daughter of the Chief Magistrate of the city had become enamoured of an elderly lighthouse-keeper of the foulest antecedents. The day before the wedding, the inevitable rejected suitor, a young man of feeble birth, called at the house, and persuaded the beautiful girl to perform a parachute drop from a great height, giving her to believe that the rush through the air would cure her instantly of housemaid's knee, from which she suffered acutely. Needless to add, the young nobleman had tampered with the parachute, and the shattered body of the beautiful girl will be quietly interred at 3 p.m. sharp the following Saturday. (Australian papers please copy.)"

"The aerodrome at Buc was the scene of a strange spectacle early yesterday morning," writes our Continental correspondent. "The sub-editor of *La Chute Mortelle*, irritated by the intense heat, unfortunately expressed the tactless opinion that his editor was a poltroon of the first water. The latter retaliated with 'Rascally rascalism.' The combatants, heavily booted and spurred, met at dawn, and each, mounting his Mors triplane fitted with 12 h.p. Dreadnought motor (as per catalogue) from opposite ends of the aerodrome, collided with terrific force at almost the exact centre of the ground. So tremendous was the impact that windows were shattered as far away as Montmartre. Honour was then declared satisfied, and the combatants finally left the ground arm-in-arm."

H. N. N.

A correspondent writes:—"The other day I went into an ironmonger's to purchase a geared drill to use as a propeller winder for a model. This ensued:—

MYSELF: Have you any geared drills in stock?

ASSISTANT: Shall I bring a large one, sir; what is it for, may I ask?

MYSELF: I intend using it to wind up the screws of a model aeroplane.

ASSISTANT (suddenly showing signs of intelligence): Yes, sir, I think I know what you mean. Back in a minute, sir. (Reappearing.) This will be just the thing.

And he produced a screwdriver!"

"Our 'aerodrome' is infested with bovines, who manifest a keen interest in aviation, so much, indeed, that it is fortunate for the milk trade that our models are not projectiles. One evening we had a bad smash, which I did not witness myself, being engaged in winding up another machine. 'Hard luck,' I said, 'what brought her down? Did she hit a remou?' 'No, worse than that,' was the reply; 'she hit a moo-moo!'"

"Recently we were flying a model aeroplane in a field, and, as is usual on such occasions, a crowd of the great unwashed assembled. A coil of line attached to a pound weight, which we employ to recover models from trees, came in for some attention. 'Bill,' said a very unshaved individual, 'what's this 'ere thing for?' 'Why, Tom,' was the answer, 'them blokes throws it over the airship when he gets too 'igh, and then they pulls 'im down.'"

A correspondent suggests that an effort should be made to produce a breed of biplane chickens. He is of the opinion that they would be much in demand among proprietors of restaurants

The *Evening Standard* stated, concerning Tabuteau's smash near Breda, that "the machine came to the ground in such a manner as to make a re-ascent a matter of great difficulty." A pretty euphemism for a really wholesale smash.

Those who know the twistiness of the roads in the Isle of Sheppey will appreciate the wish of a motorist-aviator who, after being nearly upset at several of those deceptive corners, said he wished it would rain "so as to take the curl out of them."

A well-known constructor, who is troubled by the fondness of the daily Press for booming aviation accidents, remarks: "The heat has killed 500 people in New York, and yet the Press doesn't cry out about the danger of the sun, as they would about us if we killed 500 aviators."

On the hottest day last week an aviator, gasping like a fish out of water, groaned sympathetically: "It must be rotten to be a petrol engine in this weather."



More "Aviators' Smiles": Johnstone (at the helm) and Fisher (in the passenger seat) seem to enjoy early rising.



FROM VICTORY TO VICTORY.

# BLÉRIOT

## MONOPLANES.

1910.—CIRCUIT DE L'EST (France) ...	1st. LEBLANC	}	ON
	2nd. AUBRUN		BLÉRIOT.
1911.—PARIS-ROME ... ..	1st. "BEAUMONT"	}	ON
	2nd. GARROS		BLÉRIOT,
1911.—CIRCUIT OF EUROPE ... ..	1st. "BEAUMONT"	}	ON
	2nd. GARROS		BLÉRIOT

Tuition Free to Purchasers.

Aviation School, Hendon (London, N.W.).

FOR CATALOGUES AND ALL PARTICULARS APPLY TO—

**L. BLÉRIOT** (Sole Manufacturer), BELFAST CHAMBERS, 156, REGENT ST.  
LONDON, W.

NORBERT CHEREAU, General Manager.

Telegrams: BLERIOPLAN, LONDON.

Telephone No.: 14827 CENTRAL.

## The New Type B

# VALKYRIE

## MONOPLANE

Has now been tested and has proved an unqualified success.

**ESPECIALLY DESIGNED for MILITARY SERVICE****THREE TYPES: 40-80 miles an hour. From £280.****ALL THREE TYPES FLYING DAILY AT HENDON.****TUITION FREE TO PURCHASERS. PARTICULARS ON REQUEST.****THE AERONAUTICAL SYNDICATE, LTD. (ESTABLISHED MARCH, 1909.)****At the Flying Ground, Collindale Avenue, West Hendon, N.W.**

Telegrams—"AEROVALKY, LONDON."

(6 miles from the West End.)

Telephone—KINGSBURY 24.

## The "Circuit."

### THE TRUTH ABOUT THE STARTS AND FIRST STAGE OF THE BIG RACE.

There must be a special Providence who watches benignly over aviators at Brooklands, for in no other way can one account for the fact that no one was killed, or seriously injured, at the start of the "Circuit." Certainly no thanks are due to those accountable for the organisation of the start, and, if it had not been for the possibilities of tragedy, it would have been extremely humorous to see the men who are supposed to be responsible for the welfare of aviation deliberately forcing fliers to start in a treacherous wind, cut up by appalling *remous*, with a 400 yards' run, into the very face of thousands of people and hundreds of cars packed round the track. Every man who started during the first hour was officially forced to fly to the danger of the public in a manner which would have justified the suspension of his certificate twice over if he had done it of his own free will. However, let us to our race.

#### The Preliminaries.

When I arrived at Weybridge at 9 a.m. there was little wind, but those who know anything about wind conditions knew what to expect later on. The first news that greeted me at the Heath Club (the new home for aviators just outside Weybridge Station) was that Morison, tuning up the Martin-Handasyde the previous evening, had got something in his eye, and was in bed blind, and in great pain. Poor old Morison! After all his hard work and hard luck, to go and be laid out by such a comparatively trivial accident just when he had got a machine which really suited him. Late in the day Radley drove him up to town to see an oculist, and it is hoped that with proper care he may be all right in a few days.

Then on arriving at the sheds with Herbert-Spottiswoode, who worked like a black all day with his official car, I learned that Prier had taken out the Bristol monoplane, in the calm of the early morning, and after a flight which was wild and *émotionnant* (to use an expressive French word), had very successfully smashed it. So far as I could learn the machine "swung" astoundingly at the start, but steadied down when she got her full speed on; then, when he started to come down, she began to swing again like a pendulum, finally pancaking badly, smashing up the wheels, and breaking the fuselage across, about three feet in front of the tail. Prier himself is supposed to be chiefly responsible for the design, so it would be interesting to know just why he chose to make the wings very flat close to the body, and with a greatly increased angle and camber towards the tips, a point of design which may have theoretical arguments to support it, but has never yet worked in practice. It is a great pity the machine smashed up, for he has done some fine flights over Salisbury Plain on the first machine of the type, having taken it up to 2,000 feet and flown for two hours.

About 10.30 a.m. Lieut. Porte, R.N., brought out his Deperdussin racer with a six-cylinder Anzani. He had never flown the machine before, and the wind was just then beginning to come in nasty puffs, but he took the machine straight up to about 50 ft. and made a very wavy, circular flight over the river. He landed all right, but the engine refused to stop, owing to a loose switch contact. At the same time she refused to pull properly, so, after pirouetting madly first on one wing-tip and then on the other, she wrenched both wheels off the

axle, and came to rest on the bare chassis about 20 ft. from the river, Porte just saving himself from fauving in by wrenching the machine round to the left. His mechanics promptly set to work to repair the injured wing-tips and to fit new wheels.

#### Kemp's Wonderful Escape.

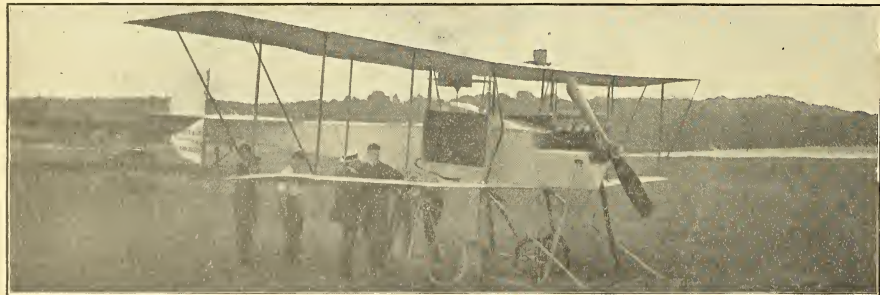
The next man out was Kemp, on the Avro-E.N.V. The machine had originally been built with extensions to the upper plane, but Kemp found that with a full load of petrol and oil she did not climb quickly enough, having very flat wings for speed. Consequently the lower plane was extended to the same span as the upper, giving about 50 square feet of extra lifting surface. The engine was running splendidly, and Kemp went up, after a circuit at about 100 ft., straight away to 700 or 800 ft., flying beautifully and keeping very steady in the nasty gusts which were now increasing in force and frequency. After a few minutes he started to plane down facing the wind, his engine half-throttled and coming down fairly steeply.

At about 150 ft. I suddenly saw the new extension of the left lower plane come adrift and tangle up with its wires and struts. The left side of the machine promptly dropped, but instantly Kemp jerked his rudder hard over to the right and put full warp on the left, and it seemed for a moment as if the machine were going to recover. A second later she heeled to the left again and did a terrific circling dive, and came down, diving and circling at the same time. The machine swinging round lifted the right wing still higher till finally she dropped sideways, apparently burying Kemp underneath. Before we could reach the machine Kemp crawled out from the wreck; when we met him we found he was quite unhurt except that, as he said, "something bit his ear" as he hit the ground.

I have seen a few smashes, but very few so complete, and never one with so long a drop, nor have I seen a machine actually give way in the air, except when the wing of Barnes' Humber folded up at about 30 ft. from the ground. The sight is not a pretty one. Poor Roe was frightfully upset at the accident, far more so than Kemp was, and he cursed the necessity for rushing alterations through at the last moment. Everyone at Brooklands had been remarking that the workmanship in this machine was better than usual, and it certainly was a pity that it should have been wrecked through a bit of rushed work being done on it, for there is no getting away from the fact that both the upper and lower wing extensions were rôt up to the work they had to do. The design of the machine was excellent, and she was very fast, faster even than the Breguets. She had a splendid engine, a 60 h.p. E.N.V., and Kemp is a really fine flier, so she had quite as good a chance of getting round the circuit as any machine, and even a fair chance of winning if she had held together. Anyhow, there is some satisfaction in Kemp's escape, and it is another proof that wonderful immunity can be assured by sitting behind the engine with plenty of stuff in front to crumple up.

#### Awaiting the Start

Going round the sheds about midday I found Sir George White at the Bristol sheds, and had a few minutes' talk with him over the Gilmour incident. It will be remembered that



The Avro Racer : Kemp standing beside it with Mr. Hukins of the E.N.V. engine which was pulling the machine so well.

Gilmour had his licence suspended by the Royal Aero Club Committee for flying over the river during Henley Regatta. He took the matter into court, where the verdict went against him. Then he took it to the higher court, where he again lost. So he took it to the Court of Appeal, where the judges ruled that they could not issue an injunction upsetting the suspension, for the good and sufficient reason that the Royal Aero Club had no power to suspend him, he having a French licence, and consequently his licence never was suspended. Sir George White, as Gilmour's employer, is carrying the matter a good deal further, and the matter is still *sub judice*, so I can only say that I was considerably surprised to find that in spite of the Appeal Court verdict, and in spite of a conference between Sir George White and the Chairman of the Committee the previous evening, when I understood everything was satisfactorily arranged, a meeting of the Committee, held late on Friday night, had decided to stick to their decision and to prevent Gilmour from starting.

Gilmour decorated his shed with a crane wreath in honour of the occasion, and about midday took up the machine he would have flown if he had been allowed, just to show how well he might have done. As a matter of fact it did fly noticeably better than either of the other three Bristols, and Gilmour showed that he had got excellent command of the new type.

Compton-Paterson brought out the "Baby" biplane and flew her a very jumpy circuit, being thrown about most alarmingly. No one flies this machine better than Paterson, and perhaps it is as well that they do not try, for the design is not such as to deserve duplication. There is no attempt at stability, either lateral or longitudinal; the pilot is perched out in front of everything, and the engine is so high above him as to make it even more dangerous than a Farman in case of a smash.

By 2 p.m. people were arriving in crowds, and the cars were parked along the track right from the new Vickers sheds to the fork into the finishing straight. Brooklands had become one huge sauceman, and the air was simply boiling out of it, just as a pot boils. Consequently, as 3 p.m. approached, the British competitors who knew their Brooklands began to make up their minds not to start till the upper wind dropped a bit and some of the boiling stopped. Finally, some of us represented to the stewards that it would be pure homicide to start the competitors in such a state of the air, and, after a good deal of confabulating, it was decided to postpone the start till 4 p.m.

One of the chief officials said to me in an awestruck voice: "But the *Daily Mail* has announced the start for three!" as if it were sacrilege to tamper with any fixture sanctified by that organ. Another said that if Conneau, who was down to start first, were willing to start, the others might stay behind later if they wished. He evidently ignored the fact that very few men would have the pluck to defy public opinion and risk being accused of having "cold feet" (as the picturesque aviator's phrase has it) by biding their own time and starting when they thought fit.

However, finally they decided to make it 4 p.m., a time which naturally made very little difference to the first few starters, but which, as the men started at four-minute intervals, made a very big difference to those after the tenth or twelfth

starters, for the wind steadied quite a good deal by 5 p.m. and the boiling inside the track itself decreased.

### The Start.

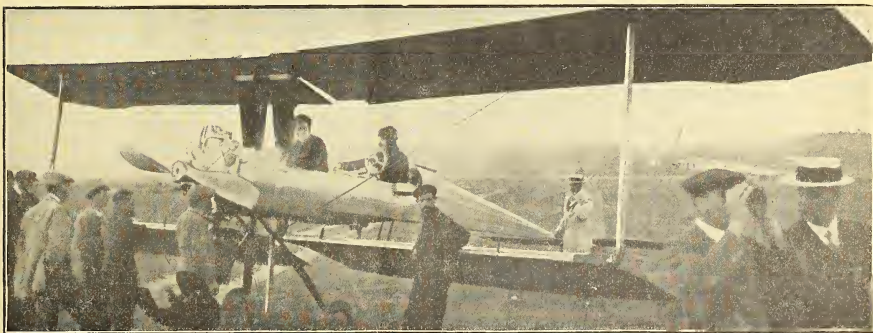
At 3.45 p.m. the first machines were wheeled out and ranged in a line by the officials right across the ground facing the south wind, and so pointing the opposite way to Hendon, with a run of certainly little over 400 yards before they were over the heads of the spectators and right in the middle of one of the regular *remous* which is always there in a south-west wind, and is caused by the wind curling over the trees and the banking at the Byfleet end, and beating down on to the ground. This *remou* was complicated by the heat sending up subsidiary eddies in the middle of it, and all the regular Brooklands aviators foresaw the danger.

The first man away was Conneau on his racing Blériot. He got off very quickly, but it was evident that the machine did not lift as sharply at the Byfleet end of the track as it should have done. Still, being light and having plenty of power, he got through the worst of the *remou* with a bit of a shaking-up, and turned to the right without going outside the track over the heads of the crowd. He had another twisting over the banking by the new bridge, but then got going with the wind in fine style and made a good line for Hendon.

The second man off was "Otto" Astley on the Birding, built by the Universal Aviation Company, Ltd., at Brooklands. He knew what to expect, and took his machine well up at the start. Though he also got a shaking over the sheds he was steadier than Conneau, and drew a rousing cheer from the crowd as he went by them. Even the French *mécanos*, who were rather inclined to scoff at the British imitation of a Blériot, were moved to admiration by the way the machine lifted and the way Astley flew it.

### Porte's Accident.

The third to start was Porte, who had repaired his Deperdussin. The machine seemed to hang fire as soon as his mechanics let her go, but he got her off the ground, and, when just about opposite the "Blue Bird," he seemed to realise that he had not enough power to lift him over the crowd and the banking and the trees behind, nor to get him over a right-hand turn between the rows of sheds, so he tried a sharp turn to the left. As he did so his six-cylinder Anzani, which had gone wrong in the morning, as I have already said, petered out, and his tail began to drop. He was then about 50 or 60 ft. up and well in the middle of the *remou*, so, either by chance or by some inspiration, he did the only thing which could save him; he swung the machine still more sharply to the left and turned what was going to be a tail-first drop into a side-slip with a dive to follow. The machine answered her helm all right, but the racing Deperdussin has no dihedral angle to the wings, so the side-slip was a good deal quicker than it would have been on a better designed machine, and before he could get her diving properly the left wing touched and she turned a cart-wheel. Machine and everything disappeared in a cloud of dust, but as it cleared Porte was seen climbing out of the wreck, and when he came across the ground it was seen that he had a huge lump on his forehead and his nose was pouring blood, evi-



M. Bréguet and M. Unné testing Blanchet's Bréguet.



dently the result of hitting his steering wheel. When I went to inspect the machine I found that, as usual, the pilot's seat was intact, but, owing to the light construction of the Deperdussin, the tanks were jammed back to within a few inches of it, and I only wonder Porte was not trapped by the legs. So far as Porte is concerned, I feel certain that if he had had another 200 or 300 yards' run he would have made his turn and have come round comfortably to make a fresh start, but the nearness of the crowd in front of him forced a sharp turn in the middle of the *remou*, and his engine died the rest.

The fourth starter was Compton-Paterson on the "Baby." For some days it had been doubtful whether he would start at all, as there had been some question as to his arrangements, and on Thursday it was even said that another pilot was wanted for the machine. Even on the morning of the start Paterson was not looking his usually bright and cheery little self, and matters were not improved by an aileron breaking when he brought the machine out to test it, a sure sign that Paterson himself had not been all over the machine as is his custom.

However, like the good sportsman he is, he ultimately decided to start, and did it very well. He was rather pitched about, but by making a short turn to the right he avoided the worst of the *remou*, and went off down wind to Hendon in very good style.

The fifth off was Védérines, who, as usual, made a fuss about everything, and objected nearly as much to the postponed start as he would have done if he had been compelled to start at the right time. Védérines' *mécas* are about as insolent as he is himself, and we can only be thankful that *La Belle France* sends us very few such specimens of her population. He went off very fast, and was soon out of sight—the best place for him.

#### Blanchet's Fearsome Performance.

The next man to go was Blanchet on the first Breguét, and never since flying began have I seen such a horrible performance. The machine lifted sluggishly at the start, and when well in the middle of the curl-over from the banking he began steadily to drop. For one terrible moment he seemed to be pancaking flat on to the ranks of cars round the track; then the tail, which was already hanging low, dropped still further and he appeared to be starting a tail slide. He was, however, trusting to his engine and trying to force the machine over the banking. He was then heading straight for Captain Wood's house, which is just outside the track. As the machine rose at the bank it heeled heavily to the right and seemed to be settling down sideways.

Somehow Blanchet hauled it straight; cleared the bank by

about 10 ft., went past Captain Wood's balcony at about 20 yards' distance, and made for a row of tall trees bordering the Byfleet road beyond. One of these trees is taller than the others, so Blanchet dodged it and skimmed over the tops of the others with his machine actually lower than the top of the tall tree. Captain Wood told me afterwards that the man was simply working like a navvy, hauling his control wheel backwards and forwards to its fullest, and warping till the wheel reached its limit on either side.

Once past this row of trees the engine seemed to warm to its work, and after some more ghastly rolling and pitching the machine steadied up. Blanchet wandered about in the direction of Cobham for a while, and then came back over the track at 500 to 600 ft. travelling fast and quite steadily. But a more sickening performance than his start certainly no one in this country has ever seen.

The seventh starter was Lieut. Cammell, R.E., on his Blériot two-seater. He went up beautifully, and made the best line for Hendon of any of the competitors, most of the others heading too much to the East, helped by the wind, which, as it grew steadier, veered round to the west and then to the north.

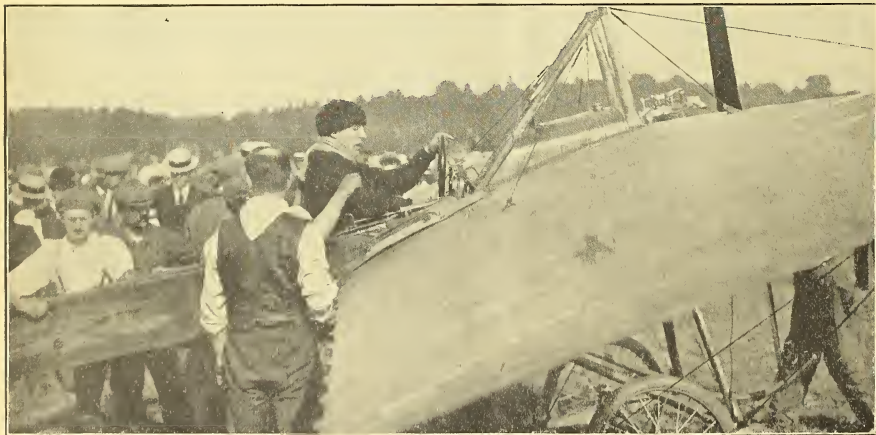
Little Audemars, formerly pilot of the "Infuriated Grasshopper" Santos-Dumont, was the next away, on a Blériot racer, and he made a splendid start.

Ninth was Valentine, on his Deperdussin, noticeably pitched about after the comparatively steady ascents of the two Blériots.

#### More Bristol Bad Luck.

Gordon-England was next, on his Bristol biplane. He started from a point fully 300 yards further back than the previous starters, a very wise move. She lifted sluggishly, and, knowing the peculiarities of the ground, he wisely came down level with the end of the sheds and "taxied" back to fire start. A second shot was no more successful, so he came back and started to work on his engine, which he had told me on Thursday was not doing all it should do, and, under the shocking conditions of Saturday, had evidently determined to do nothing at all. He worked at it for a long time and finally took the machine back to its shed, where another propeller was fitted. When he tried again at about 7.30 p.m. without better results, and when I left some time after 8 p.m. the machine had been put into its shed for further work. It was very hard luck on England, for he is a magnificent flier, and would have made a very good show if he had had any luck.

Pizey was the eleventh starter, and his machine also lifted sluggishly, but, being lighter than England, he had a better chance, and he was aided by starting far back on the ground, as England and the other biplanes did. He got up high



Lieut. Porte, R.N., taken a minute before his smash

enough to go out over the trees at the end of the track, and, after wandering about somewhere Chertsey way for a few minutes, he evidently found an upward *renvoi* which gave him his elevation, for he came back down wind at a height of 600 to 700 ft., going very strong. He had told me on Thursday that before he really started across country on any of the stages he was going up to something like 1,000 ft., and the programme is certainly a good one.

While Pizey was still wandering there was an appalling racket from the starting line, and Pixton shot off at a really fine pace, driving Tabuteau's European Circuit machine, now fitted with a very noisy, but evidently effective, Renault engine. His start was far the best of the biplanes, and shows what a really decent engine will do for a machine, even if it be a bit heavier than the more fashionable engines.

S. F. Cody started thirteenth, very pleased with the way his new machine had been behaving in practice and with the push he was getting from his big Green engine. He got off quite easily, turned to the right round the sheds, and came back over the sewage farm flying, as is his custom, rather lower than he ought. He waved us a cheery farewell as he went by, dodged over the railway line, got a kick from a gust over the railway bank which slewed his tail round without appearing to affect his stability in the least, and went away very fast with his big, geared-down propeller flapping amiably.

Conway-Jenkins was down to start next, and was duly timed as starting, but he wisely decided not to risk his Blackburn till the weather improved, and postponed his start only to fall a victim to bad luck later on.

De Montalent on the second Breguet was officially the fifteenth starter, and his start was just as good as Blanchet's had been bad. The machine lifted beautifully, evidently with plenty of power, and was noticeably steady.

By this time the wind had dropped somewhat, and the heat on the inside of the track was less; still, the air conditions were very bad, and Hamel, who started next, was rather shaken about, though his Blériot lifted well and was very quick in getting round and away to the north.

#### The Last Four

Lieut. Reynolds also wisely decided to sacrifice an hour or so and wait for steadier wind, but he was timed as having started seventeenth.

Hucks with the Blackburn followed suit, so the next starter was Weymann, who went off like a rocket on the 100 h.p. Nieuport, apparently impervious to wind, *remous*, or anything. We were therefore all very surprised to see him as he came back towards us suddenly swerve round to the right and come down. When we went to investigate we found that his map had come adrift and was unwinding itself even more rapidly than the speed Nieuport could cover the ground shown on it. There was a long delay fixing it up but when Weymann started again he never troubled about direction or elevation. He simply shot off across the ground instead of along it, and went out over the sewage farm and railway as if nothing ever happened to 100 h.p. engines.

#### That Austrian Machine.

The last official starter was Lieut. Bier on the Austrian Erich, a colossal monoplane with a six-cylinder vertical Austrian-Daimler engine of about 120 h.p. This machine had

never flown, and apparently the engine had never been tuned up, but when it did start it was a wonderful apparition. The wings are of a kind of exaggerated Wies type with turned-up tips, only not so much humped in the middle. The pilot sits behind the wings, as in the Antoinette, and between the tanks and the engine is a seat for an heroic mechanic, on this occasion occupied by a brother officer of Bier's. Both he and Bier are two of the finest looking men I have ever seen, Bier's style being somehow reminiscent of Lancelot Gibbs, who, before he hurt himself, promised to be one of our best fliers. After some delay the engine started and the machine shot off into the eye of the wind, Lieut. Banfield, the acting-mechanic, waving good-bye as the machine went up over the sewage farm. They swept round in front of the sheds, out over Byfleet, and presently came back at a terrific speed, the engine missing badly. After another turn they came down and spent about two hours adjusting the engine, after which they started well and did quick time to Hendon.

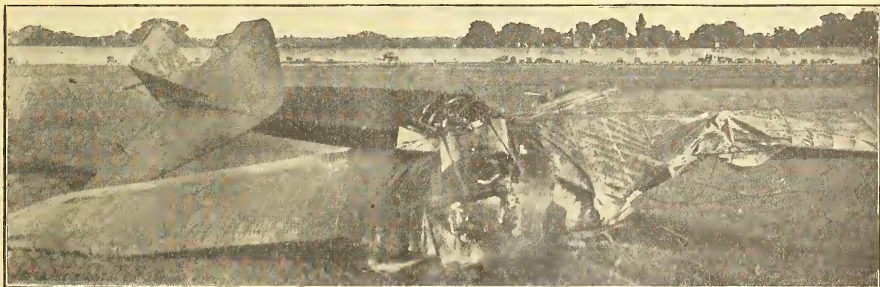
Just before 6 p.m. Lieut. Reynolds went off on the Howard Wright, flying very steadily, with his 60 h.p. E.N.V. pulling in excellent style. He had given away over an hour, but that was vastly better than starting when he should have done and spending five or six hours doing repairs in consequence.

Soon after Reynolds left, Hucks brought out the first Blackburn, which went up in very good style, and after a half-circuit of the ground he went off towards Hendon, apparently making very good time. The machine looks very like an Antoinette in the air, except for the blunt bow, and it evidently flies excellently. Hucks and Mr. Blackburn had early in the day talked over with me the advisability of waiting till evening before starting, and I think they were wise in acting as Mr. Reynolds did and sacrificing time for the sake of safety.

At about 7 p.m. Conway Jenkins brought out the Blackburn with the Isaacson engine, which was pulling magnificently. The wind had now gone round to the north, and as he rolled at about thirty-five miles an hour against it, not intending to lift at all, a gust met him and lifted the big machine about twenty feet off the ground. Not having proper way on Jenkins had no proper control, and as the gust died away he came down on one wing-tip. As he fell a fresh gust caught him and turned the machine clean upside-down with Jenkins underneath. For a few seconds it looked like an ugly smash, but Jenkins soon crawled out from under the wreckage, and when I went to look at the state of affairs I found that the body of the machine was held clear of the ground by the wreck of the crumpled wing. Jenkins told me he would certainly have broken his neck but for the "Birdling" belt he was using, for when the machine hit the ground he was slung up in the belt with his head a few inches off the ground. He just pulled out the pin, in the way illustrated in THE AEROPLANE last week, and crawled comfortably out without a scratch.

This was the official ending of what ought, under all the conditions, to have been a much more disastrous day, and the promoters of the race, and those who drew up the rules and regulations, should thank their stars that they went to bed on Saturday night without being responsible for loss of life or severe injury to anyone.

The rest of the race is a different matter. Men can start



Porte's Deperdussin after his smash, taken in the evening as the crowd was leaving. As may be seen, there were still many cars round the track.



when they like and stop when they like, and though there may be crowds at the controls to see them arrive and depart there will not be the same spur to fly in bad weather as there was in starting against the fall of the flag with thousands looking on ready to comment on the non-starter as a non-trier.

#### The Absentees.

The non-starters were: Des Moulinais (injured in Paris); Fenwick (wrecked the Handley-Page monoplane at 4 a.m. Saturday morning at new ground at Fairlop, Essex); Kemp (smashed Avro biplane in morning); Morison (injured eye Friday night); Radley (nothing to fly on); Gilmour (certificate suspended by Royal Aero Club); Prier (smashed Bristol monoplane in morning); Labuteau (preferred to remain in France); Lorraine (not ready to start); Wijnmalen (Deperdussin's Gnome engine refused to pull). C. G. G.

#### The Times to Hendon.

The official timing to Hendon, including delays at start, stops on the way, and so forth, gives the following results:—

- |                              |                                  |
|------------------------------|----------------------------------|
| 1. Védrières (19 m. 48 s.).  | 10. Paterson (27 m. 52 3-5 s.).  |
| 2. Conneau (20 m. 3 3-5 s.). | 11. Montalent (29 m. 24 s.).     |
| 3. Hamel (21 m. 45 s.).      | 12. Pizey (48 m.).               |
| 4. Valentine (22 m. 41 s.).  | 13. Weymann (58 m. 17 s.).       |
| 5. Astley (24 m. 16 4-5 s.). | 14. Reynolds (1 h. 41 m. 56 s.). |
| 6. Audemars (25 m. 13 s.).   | 15. Bier (2 h. 6 m. 27 s.).      |
| 7. Cody (25 m. 18 s.).       | 16. Hucks (2 h. 15 m. 4 s.).     |
| 8. Blanchet (25 m. 19 s.).   | 17. Cammell (3 h. 31 m. 5 s.).   |
| 9. Pixton (27 m. 9 s.).      |                                  |

#### The Arrival at Hendon.

I arrived at Hendon at 1.30, just avoiding the crowd which came later, and just had time for an unhurried but thoroughly fusty lunch. Then I went out to the timekeepers' table at three o'clock, and waited. At 3.15 came the message that the start was postponed till four, so I waited some more. At last, at 4.15 about, someone with glasses spotted a small spot in the sky which gradually resolved itself into Conneau, who came over at about 3,000 ft., gradually dropped to 800, and then planed down sharply.

At 4.28 Astley arrived, flying rather low (about 700 ft.), and circled half round the aerodrome before planing down. His wife came out to greet him, and was met, to her disgust, with a kiss liberally flavoured with castor oil. He landed somewhat "sideways," the wind being in a different direction from that at Brooklands.

At 4.39 we saw a biplane at 1,500 ft., and Paterson came over on the "Baby," carefully touching ground and then rising again and dodging round the enclosure to his own shed.

Védrières hove in sight at 4.40 very high, and made a splendid racer's landing, coming down all out during the whole of the last two miles and landing without any delay.

Eleven minutes later Blanchet came right over, turned wide at the end of the ground, and "taxied" to his shed. He said he had no difficulty in finding his way. I notice that he had marked on his map the specially simple course I had suggested to him when discussing the route with him the night before.

Then, just before five, a monoplane came into view, flying very high, and, after a few minutes, we saw that another was in sight. They proved to be Audemars on the Blériot and Valentine on the Deperdussin, who landed practically together.

Audemars, who weighs 7 stone odd, and Valentine, who stands about 6 ft. 2 in., looked very funny as they posed together to be photographed. When this had been done Audemars started to strip off his overalls, but found a Kinema camera still busy on him. The sight of poor little Audemars,

with a "boiler suit" about his knees, running as best he could to escape from the camera, was really humorous to all, even himself. A longish wait followed, while everyone was wondering what had happened to Lieut. Cammell, who had started before them, and to England, who was due to arrive.

However, at about 5.20, a Bristol came in sight at a fair height, and we all expected to see England. Much to our surprise, however, it proved to be Pixton, who stated that England's machine had refused to lift. He attributed his own success to his 60 h.p. Renault engine, England having a Gnome. Before the triumphal chariot had brought Pixton home Cody's machine loomed large above us, and he landed in his usual faultless style.

He brought us the unwelcome news of Porte's, Prier's, and Kemp's accidents, and said he had seen Lieut. Cammell's machine on Hounslow Heath surrounded by a crowd, but apparently all right. Here, again, there was fun over the Kinema, Cody refusing to suffer alone, and hauling Pixton neck and crop into the car to help him bear up. He is reported to have given Pixton a kiss of blessing on the forehead, but I am in a position to state that he did not, for I was only six feet off during the whole performance.

We had just recovered from this excitement when a Blériot came in sight, and at 5.33.45 Hamel landed; at about 5.33.46 he was out of his overalls and strolling about. The Brooklands-Hendon country must be by now as familiar to him as the pattern of his dining-room wallpaper.

He said he had overhauled another machine, and in a few minutes de Montalent came in on the second Bréguet, landing at 5.37.

He had just been welcomed when another Bristol turned up with Pizey on board. He had been forty-eight minutes on the road, and said he had had to go nearly to Woking and back to get his height owing to the bad state of the air.

After this there was a long wait, and then, at 6.22, Weymann made a paralysing appearance on the 100 h.p. Nieuport. He had been planing down for about two miles, cutting in and out, and he suddenly arrived on the ground at his 80 m.p.h. gliding speed, apparently dodging in between the surrounding trees and petulantly knocking off odd twigs with his wing-tips.

Reynolds, whose start had been delayed as stated in the early portion of this report, arrived at 6.53.

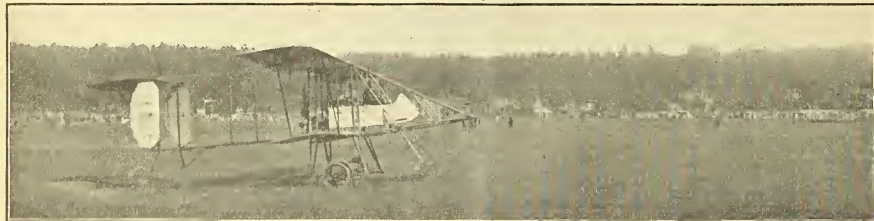
Hucks and Bier, who had also waited for the wind to drop, came over at 7.31 and 7.34, while Cammell, who had had a broken inlet spring, arrived from Hounslow at 8.3.

#### The Start from Hendon.

I first rolled out of my alleged bed in a portable hangar (by kind permission of Mr. Blackburn) at 3.0, and was pleasantly surprised to see a crowd arriving. My pleasure was still greater when I saw the crowd steadily growing, till at 4 o'clock it must have numbered somewhere near 30,000 people—and this only just after sunrise!

One surprising thing was the large proportion of the crowd which wore "official" badges and congregated round the unfortunate timekeeper. A few of one's hardworking friends of the Aero Club one naturally expected to find doing useful work: so they were; but there was, in addition, a horde of professional badge-wearers, composed of people who do nothing else for the good of aviation. The immediate result of their presence was that the two timekeepers could not see one another, and, in the confusion, Beaumont was dispatched 15 seconds too early.

Védrières followed him at 4.0 exactly, and, the starting-ground having been more or less cleared, Messrs. Reynolds



Pizey on the Bristol starting. In the distance is Montalent's Bréguet.



and Dutton got five starters off in five minutes—very smart work indeed. Védérines, Beaumont, Hamel, Valentine, and Audemars went off like clockwork. Five minutes later came Pixton, who had claimed 2m. 39s. rest time, but even then he was delayed a quarter of an hour through the plugs of his Renault being sooted up owing to over-lubrication. He and Gordon England worked hard and quickly, and really lost surprisingly little time. Paterson should have gone off at 4.8.46, but to everyone's disappointment it transpired that, for private and personal reasons, he had refused to drive the "Baby" any farther, which was a pity, as he did a fine performance from Brooklands, and is one of the very few men who can handle that peculiar-tempered infant with any certainty.

Then there was an 18-minute gap, after which Pizey and Astley were sent off. Pizey, however, could not get his engine to lift on the first run, so came down at the far end of the ground, where he adjusted things generally, and got off. Astley was due to start at 4.4.28, but claimed a half-hour's rest time, as there was no castor oil to be obtained in the aerodrome. Eventually he got a supply from Grahame-White, who personally started up his engine when his own mechanics had failed to do so. Blanchet also claimed half an hour, and left at 4.36.21.

Weymann was due to start next, but in getting his machine from the shed he damaged his propeller, and claimed "indefinite rest" till he could obtain a new one.

Cody had claimed 40 minutes "rest," and left in very good style at 4.45, with an extra rousing cheer from everyone present.

Just then a monoplane came in sight from the North, puzzling everyone. It turned out to be a Blériot, and in a few minutes Audemars dismounted from it, saying that, when near Bedford, two cylinders of his Gnome started missing, so that, even with his light weight, he could not climb any higher than 1,000 feet. As he saw a large bank of fog in front of him, he thought it best to return.

Shortly after he landed, Lieut. Bier's gigantic Etrich made its start in a manner most uncomfortable to watch. The big Austrian-Daimler engine evidently takes some time to get warm and pull its best, for during the whole distance of the ground the machine seemed about to lie down and die. However, it soon picked up, and when it finally disappeared was going great guns.

Reynolds, who started next, was most unfortunate. The purr of the E.N.V. sounded all right, even to the many trained ears around. But when he had made his start it was at once seen to be pulling badly. He had to descend, and eventually spent some hours rectifying a carburettor trouble which was not the fault of the engine at all, but the sickening thing about it, from his point of view, was the fact that he had actually made his official start, and so was barred from claiming rest time.

Audemars now got up again, and went off very well, the erring cylinders having decided to resume work. He was followed by Hucks, who made one circle and left, climbing steadily in fine style.

Then there was a long wait, broken by the second resurrection of Audemars, his disaffected Gnome having again struck work.

He and Lieut. Cammell finally started almost together, at about 8.12, followed at 8.15 by de Montalant; but shortly after Audemars again turned up, and, thoroughly tired of his engine strike, put the machine in the hangar and gave up the race.

There now remained only Weymann and Reynolds. Of these, Weymann, having at length obtained his new propeller, left at 1.7, doing somewhere near 100 m.p.h., as he had a favouring wind of about 20 m.p.h. Reynolds' carburettor had at last been got right, but the 20-mile wind, which helped Weymann, was by no means so nice for the slower Howard-Wright, and Reynolds, who is anxious above all else to complete the course, was wise enough to defer his departure till the wind dropped. He finally got away at 6.8 p.m.

### On the Way.

The first news we had of the competitors was that Astley had come down at Bedford. He telephoned that he had run into a fog, and was under the impression that he was 2,000 ft. up when he suddenly found himself running along the ground. Wonderful luck that he should land without hitting even a hedge. When the fog cleared he got going again, but had foolishly started without breakfast, and his breakfast at Bedford disagreed with him, so that he became violently airsick (as Garros had done in the European Circuit), and had to come down at Irthlingborough. He spent the night there, and went on to Harrogate in the early morning, arriving at 7.35 a.m.

Then came news that Védérines had got to Harrogate at 7.3 a.m., Conneau arriving at 7.7 a.m. Valentine came in at 7.42.

Cody, having come down to repair a leaky radiator, not a cylinder, as reported in some papers, got to Harrogate at 9.42, quite a splendid performance.

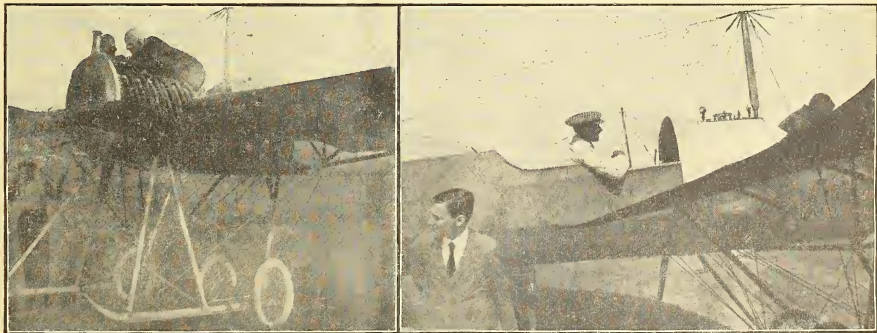
Then came news that Bier and Banfield and the great Etrich were down near Hatfield with a burst waterpipe, and, later, that they had finally smashed up.

About midday came news that Pixton had smashed his Bristol-Renault at Spofforth, near Leeds, cutting his head and breaking a finger. Also that Pizey had come down at Melton Mowbray, and was waiting for a new propeller.

Hamel got to Harrogate, after landing at Melton Mowbray, at 11.42 a.m., and promptly fainted on getting out of his machine. The only marvel is that he ever got as far, so soon after his Gordon-Bennett smash. However, he has wonderful pluck and recuperative powers, so he went on at 5.7 p.m., and got to Newcastle at 7.39.

Védérines reached Newcastle at 8.47 a.m., Beaumont at 8.55 a.m., and Valentine, who had been inspecting the coal-fields of Durham *en route*, only arrived some hours later.

Védérines finished the first stage to Edinburgh in the rain at 10.59 a.m., "Beaumont" at 11.18 a.m., and Valentine turned up at 4.18 p.m.



The bow and hull of the Etrich. On the left Bier and Banfield are inspecting the engine just before starting, and on the right Bier is in the pilot's seat waiting to test the controls

The official flying times for the leaders at Edinburgh were:—1. Védérines, 5h. 59m. 1s.; 2. "Beaumont," 6h. 10m. 22s.; 3. Valentine, 7h. 4m. 19s.

Of the rest, Reynolds left Hendon in the evening and spent the night a few miles to the north. Blanchet came down at Luton and broke a wing. De Montalent came down at Melton Mowbray for petrol, stayed there till 4 p.m., and then came down at Wetherby about 8 p.m., damaging his machine.

Weymann only left Hendon at 1.15 p.m., taking the delay out of "rest" time, and came down near Leeds about 2.50, damaging his chassis.

Hucks had Gnome troubles, and came down near Luton, damaging wing, and Cammell had a Gnome cylinder blow its head off. He came down hurriedly, turned over in a wheat-field, and, finding he could not repair in time, retired from the race.

#### Tuesday's Flying.

"Beaumont" left Edinburgh at 3.10 a.m., having used 5h. 26m. of his rest time out of Section 3, and Védérines left at 3.25 a.m., having used 53 hours of his "rest." Valentine did not start till 7.40 a.m.

At Stirling the times were: "Beaumont" 3.56 a.m., Védérines 4.4 a.m., Valentine 8.18 a.m. At Glasgow the times were: "Beaumont" 8.10 a.m., Védérines 9.4 a.m., the latter having lost his way, and getting there a minute after "Beaumont" had left.

Hamel left Newcastle at 4.48 a.m., and came down near Dunbar, owing to the wind. Astley got to Harrogate at 7.35 a.m., and Cody left Harrogate at 4.51 a.m.

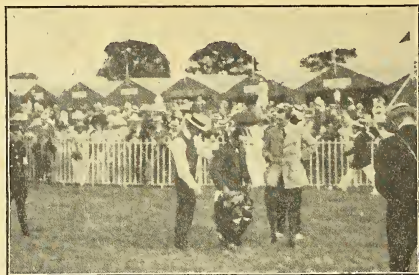
Reynolds, leaving Harrogate at 7.53, was turned over by a gust and smashed his wings badly.

At Carlisle the times were: "Beaumont" arrived 11.16; left 12.11. Védérines arrived 11.37; left 12.35.

Cody ran into a wall landing near Newcastle, and damaged his machine.

#### Extra Prizes for the "Circuit."

One of the great objections to the rules of the "Circuit" is



Valentine, on right, talking to Audemars, who is struggling out of his "olies" at Hendon.

that all the prize-money goes to one man, instead of being split up to encourage the others. There are, however, several minor prizes to be competed for, and the most important of these, fortunately, are so given as to encourage good flying. Sir George White, of the Bristol Company, has offered £250 for the pilot who finishes with the most parts *in statu quo ante*, and one of the petrol companies has given £125 for a similar prize. The Brighton hotels have united, at the instance of Mr. Harry Preston, in presenting a handsome cup for the first British aviator to reach Brighton. Mr. Ogden has presented a cup for the fastest flight from Hendon to Harrogate, and the Yorkshire Aero Club, through its energetic President, Mr. Stuart Hirst, has put up £200 for the first of its members to reach Harrogate.



Beaumont, the first arrival, greeted at Hendon.

#### French Military Activity.

The French military trials are fixed to take place from October 1st to 31st, and they include a speed test of 300 kilometres, carrying a load of 300 kilogrammes (700 lbs.). Forty-one constructors have entered, and they will be represented by 138 machines. Twenty-four different makes of motors will be used on these machines. On grand manoeuvres, from September 10th to 20th, an air scout section of eight officers each will be attached to the 1st, 6th, 7th, and 10th Army corps. Aeroplanes will also be used in the siege manoeuvres at Toul and Verdun from July 25th to the beginning of September. Fresh officers are being detailed daily for duty with the *corps d'élite* of officer pilots which the French War Department is pushing forward with the greatest possible energy. Meantime we are buying machines in ones and twos, and still thinking in tens about making pilots.

#### A Good Start for the Singer Prize.

On Saturday, July 15th, Lieut. Cammell, R.E., made the first official flight in competition for Mr. Mortimer Singer's prize for Army and Navy officers. The prize is offered for the longest flight across country with a passenger over a course between two points not less than 10 kms. apart, only complete laps of the course to count. Mr. Cammell, who had with him as passenger Mr. Reynolds, R.E., covered 110 miles in 2h. 40m. on his Blériot two-seater, covering three laps of a 33-mile course, the points being Larkhill Camp and Warminster, which are 16½ miles apart. They came down about 10 miles after completing the third lap, owing to running into such heavy clouds that they could not follow their course, consequently only 99 miles will count for the prize. The naval men at Sheppey reckon on the winner of the prize having to do at least 300 miles.



# GREEN'S

—ALL—  
BRITISH

# AERO ENGINES

The Engines for Record making. Combine Reliability, Power and Economy with Light Weight.

All Green Engines are water cooled and maintain highest efficiency when running continuously under full load. Made in two sizes, 30-35 h.p. and 50-60 h.p. Particulars and prices upon application.

**THE GREEN ENGINE COMPANY** (SOLE LICENCEES UNDER THE GREEN'S ROTOR PATENTS SYNDICATE, LTD.),  
55, Berners Street, Oxford Street, London, W.

E.H.G. MAKERS FOR THE PATENTEES—THE ASTER ENGINEERING CO., LTD.

## Nieuport Monoplanes.

**GORDON-BENNETT CUP, 1911.**

**1st. Weymann on a Nieuport. 3rd. Nieuport on a Nieuport.**

GENERAL AGENT FOR THE BRITISH EMPIRE:—

**MAURICE DUCROCQ, Brooklands Aerodrome, Weybridge, Surrey.**

NEW CATALOGUE.

## PFEIL & Co., Aeroplane 145a to 157, St. John St., Clerkenwell, London, E.C. Accessories.

STOCK KEPT OF THE FOLLOWING:—

Steel Tension Wire, Steel Wire Cable, Aluminium Castings, Steel Eyeletted Tension Plates, Steel U Bolts, Eyebolts, Straining Screws (various), Bolts & Nuts, Screws of every description, etc.  
**ALL ENGINEERS' MATERIALS.**

**WATTS' PATENT STEEL LOCKING WIRE STRAINER.**

Swivel and Single Screw.



CAN BE LOCKED AT EVERY HALF TURN OF BARREL.

SAMPLE TO. POST FREE.

ONE OF OUR "Retort Manganese Steel" Stocked in Round, Square, Flat Bars and Sheets.

HAND AND MACHINE TOOLS.

Inspection invited of our MACHINE TOOL DEPARTMENT.

Accessories Catalogue Free on Application.

\*Phone: 6055 Holborn (6 lines).



## The Week's Work.

## Monday, July 17th.

BROOKLANDS.—Reynolds, on Howard-Wright-E.N.V., out in big wind, stationary over sewage farm for appreciable periods on way up against wind. Barrington-Kennett, on Air Battalion Bristol, landed beyond Byfleet owing to trouble with cam gear of Gnome. Repaired and came back later in day. Johnstone out on older Howard-Wright-E.N.V., with Bell as passenger. Good healthy load for machine supposed to have an elderly engine. Percival also out on the Billing "Oozely Bird."

BECCLES.—Short cross-country flight, route up-hill, with telegraph wires at top. Decided that the telegraph wires look strong, so discontinued flight by brusque *vol piqué* into standing corn. Shoved out of the corn, and steeplechased back over dykes and fences. Immense local enthusiasm at our returning *en plein vol*.

## Tuesday, July 18th.

BROOKLANDS.—Pizey and England on new short-tailed Bristol biplanes arrived in about an hour from Salisbury Plain, with healthy breeze behind. Much interest in quaint little machines, with low elevator and high tail. Fine skids, and good accommodation for pilot. Practically no weight on tail, so must be approximating to automatic stability. Both very pleased with behaviour of machines, which handle quickly and easily after big military "buses. Percival on "Oozely Bird." Johnstone and Reynolds on the two Howard-Wrights, and Barrington-Kennett on Air Battalion Bristol, all out. In evening, Cammell, of the Sappers, arrived from Salisbury Plain on own Blériot two-seater. Took 47 minutes for the 65 miles. Good going, even with wind behind.

BECCLES.—Evening. Mysterious loss of 30 revs., since put down to state of the air; unavailing search for lost revs. Decided to have a try, and made a nice little circuit over to the marshes, returning to common non-stop. Beccles delirious.

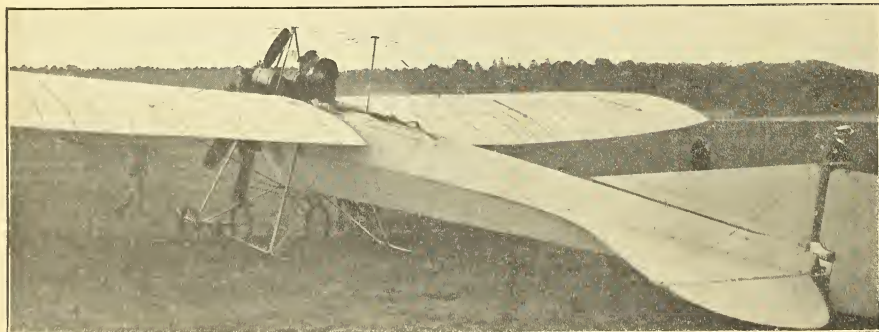
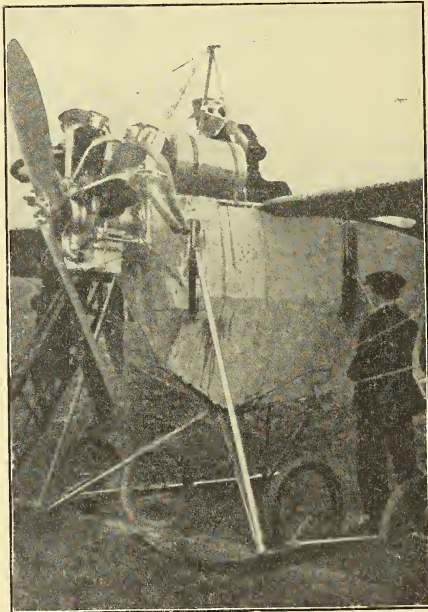
## Wednesday, July 19th.

BROOKLANDS.—Barrington-Kennett out early on Air Battalion Bristol. Landed near Staines reservoir with more Gnome engine trouble. Later repaired, and flew round Windsor Castle and back to Brooklands. (N.B.—Warning to Aviators—Don't fly round Windsor if you can help it, or we shall have Winston Churchill making a prohibited area round it, and that area may include Brooklands, and then where would you be? £200 fine, or six months, every time you fell into the sewage farm.) Watkins doing first trial flights on Vickers No. 1 (R.E.P. license), a remarkably handsome machine, with a R.E.P. engine which barks heartily.

BECCLES.—Out 4 a.m. practising quick rising to get away from Kessingland, which we are visiting to-morrow. Lost revs. returned, engine running beautifully; nearly a dozen flights, all cross-country. Landed on the marshes several times, getting off again clean, with under 55 yards (actual measurement) to clear dykes in. Dismantled for road transport to Kessingland, 1½ hours' work; hitched on behind a cart and transported; reassembled at Kessingland in two hours, and "taxied" round to see everything right.

## Thursday, July 20th.

BROOKLANDS.—Morison out on Martin-Handasyde and damaged chassis a trifle. School Avro biplane out with Kemp as pilot, practising for circuit. Kemp discontinued flight and did considerable damage to machine, but not to self. Pequet out on Blériot-type Humber with new Clerget-type engine. Rather a pretty machine, and seems inclined to fly nicely. Reynolds and Johnstone, on two Howard-Wrights, both flying well. "Circuit" machines arriving in force. During afternoon, Pixton, on military Bristol, put in flights for "gate-money aggregate," but Raynham, on Avro Farman, got in an extra



Two views of "Vickers No. 1," the first machine built by Vickers, Ltd., under the supervision of Captain Wood, to Mr. A. R. Low's designs, under R.E.P. licence. The chassis is highly original, combining the best points of the Farman and R.E.P.

flight and beat him. M. Bréguet, with M. Unné as passenger, made trial flight on Blanchet's "Circuit" machine, and made some astounding glides at remarkably flat angle. Machine climbs splendidly, and general construction greatly admired. Conneau, on new Blériot racer, also made trial in good style. Watkins, on Vickers No. 1, made his first circuit on a monoplane. Said the machine flew herself with throttle half open. New patent chassis a great success, combining good qualities of R.E.P. and Farman. Whole machine a fine piece of work. Percival, on "Oozely Bird," very busy, trying to stop the howl of radiators by fitting canvas screens. Howl now reduced to a mere faint moan.

HENDON.—Perry up at dawn, and very busy with the school Valkyrie, making flights from 30 ft. to 50 ft., and showing great improvement at turns.

BECCLES.—*Lachez-tout* at 7.30 p.m. to fly back to Beccles; 135 yards' run and an 8 ft. hedge to clear, 6 ft. of which was solid bank. Cleared the bank, but wheels fouled hedge. Almighty smash. Lieut. Parke, the pilot, caught under front edge of upper plane, engine running slowly, petrol pouring out; thanks to exhaust pipes, petrol did not catch fire. Damage.—Machine: skids flattened out, propeller blade split, centre of lower plane slightly damaged by broken skids coming through. Pilot: some bruises only, thanks to skids breaking gradually and easing everything down. Experience gained: If you *must* sit in front of engine, get as far from it as possible, have a strong engine mounting, exhaust pipes, and lot of stuff in front of you to break up gradually; and no belt.

## Friday, July 21st.

BROOKLANDS.—Sleep of the just broken at 4.30 a.m., with an uneasy feeling that it was horribly late. Worst forebodings confirmed, as Jenkins had already taken out the Isaacs-Blackburn, done some straight flights very nicely, and, having heard awful things about the Northern landing grounds, had tried the chassis for strength: two rubber springs and one tail-skid.

Walton-Edwards Colossoplane had been rolling, and pilot tried to taxi her through the gap in the fencing, but missed his aim rather badly: one strut and three feet of the lower plane.

Johnstone performing excellently on "Jack Dare's" Howard Wright, getting to 600 feet and planing down. Then Reynolds took up the "Circuit" machine and went right out over Chertsey. Was just thanking Olympus for nectar and ambrosia in the form of excellent cocoa and sandwiches with which Mrs. Handasyde bought from us an eternal blessing, when a full-size worm's-eye view of Cody was seen as he came over. He said that the plane was surpassing even his expectations, and then he returned to Farnborough by train to bring over his spares.

Barrington-Kennett, who had been flying round for a few minutes on Air Battalion Bristol, suddenly vanished towards Chertsey.

Percival took out the Billings "Oozely Bird" and got his



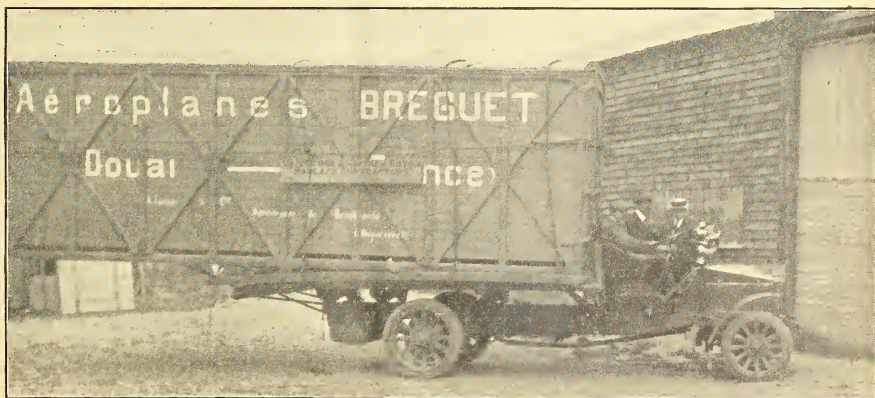
At the "Blue Bird" Restaurant, Brooklands:—Left to right: Gordon England, C. C. Turner, Lieut. Reynolds, R.E., Collins Pizey, and O. C. Morison. Out of focus in the foreground is Mr. Lang, the propeller maker.

ticket, rising to 400 feet, and landing very well. Considering how little spare power there is on the machine, Percival has done marvellously, and must be classed among our best pilots.

Pecquet was practising on the Humber (Blériot type) with Humber engine (Clerget type), and Astley brought out the Birdling, which appeared to be lifting splendidly. He complained, however, that the tail was not yet properly adjusted. While they were out, Barrington-Kennett returned in great style at 1,600 feet, and planed down very nicely.

Morison took out the big Martin-Handasyde, with the new wings, but although she was, as usual, magnificently stable, there was still a sluggishness in lifting. Unfortunately, while rolling, a wire broke and let the chassis down, no further damage, however, resulting.

Audemars on Blériot. Wijnmalen flying rather wildly on Deperdussin, obviously tricky laterally. In evening, Pixton



How some of the machines arrived at Brooklands:—The Breguet on a Halford lorry.



and England out on new Bristols. Reynolds going strong on Howard-Wright-E.N.V. Morison out on Martin-Handasyde. Came down, complaining of something hurting his eye. Thought to be a piece of soot from engine, so doctor called in. Little relief obtained. Watkins, flying Vickers No. 1, made mistake in landing and pancaked flat for 20 feet. Net result: a broken skid. Got off very cheaply. If machine wood instead of steel would probably have meant a broken fuselage.

HENDON.—Lieut. Wells had the school Valkyrie in hand, and put in lot of good practice, flying steadily and well at good heights.

#### Saturday, July 22.

BROOKLANDS.—Both Bréguets out testing in early morning. Weymann also, on Nieuport, flying at astounding speed. Johnstone out very early. From 9 a.m. to 8 p.m. ground devoted to start of "Circuit of Britain." Afterwards Johnstone out again on Howard-Wright-E.N.V., flying well, but reported air in extraordinary state. All usual *remous* in full working order, and a number of new ones in unexpected places. Barrington-Kennett, on Air Battalion Bristol, tried to take Capt. Maitland up as passenger. Gnome behaving worse than ever. Just got off ground, very much tail down, and made small circuit, when gust tilted machine sideways. Left wing touched, machine swung round. B-K. took her further round to avoid running into two men going out to Porte's wreck, came down with side drift on, and pulled chassis out by roots. Maitland's ankle caught by front of plane and nearly broken again. Shall have to rename him Jonah if he has any more discontinued flights. As darkness fell, the unfortunate Wijnmalen still trying to get his Gnome to pull. Only able to get hops out of his Deperdussin. Obvious relief of Mrs. Wijnmalen when machine finally put back in shed. So ended a day rather too full of excitement to be really amusing, but still very instructive.

HENDON.—Lieut. Wells was out on Valkyrie. Continued excellent progress. Competitors in "Circuit" arrived, and ground having, of course, to be kept clear for them, there was no school flying.

#### Sunday.

HENDON.—Nothing doing till about 5 o'clock, when Grahame-White came out and did his usual clever trick flying performances on the "Baby," which Compton Paterson had flown over from Brooklands.

Then Weymann, testing his engine, astonished the populace by his performance. It was only two circuits—but a circuit of Weymann, on the 100 h.p. Nieuport, though short in time, is very sweet to watch. But his *virages* still give one cold shivers.

All still breathless, when de Montalent, out of sheer pity, brought his machine out. Slowly rolling to end of the ground, he let his engine stop, and waited for his mechanics to start it: a thoroughly restful performance.

Fixton had found on Saturday that his ailerons required considerable effort to work them. So on Sunday he set to work and reduced his leverage by a half. He found, on testing the machine, that it was much easier. Much amusement in seeing solemnity with which he rolled more than half a mile, at about five miles per hour, in order to find the particular patch of ground (about 100 yards by 50) whence he stood a chance of getting up without a broken chassis. Hendon surface awful after Brooklands.

By this time de Montalent's mechanics had gone to his help, and he did a few circuits. A curious point about the Bréguet is that it appears to go on flying quite well when the engine is cut off—at least, such was the remark of a spectator with an untrained eye.

The last item was an example of Cody's usual pet performance of flying about three circuits without removing his left wing-tip from the ground.

#### Exhibition Flying at Hendon.

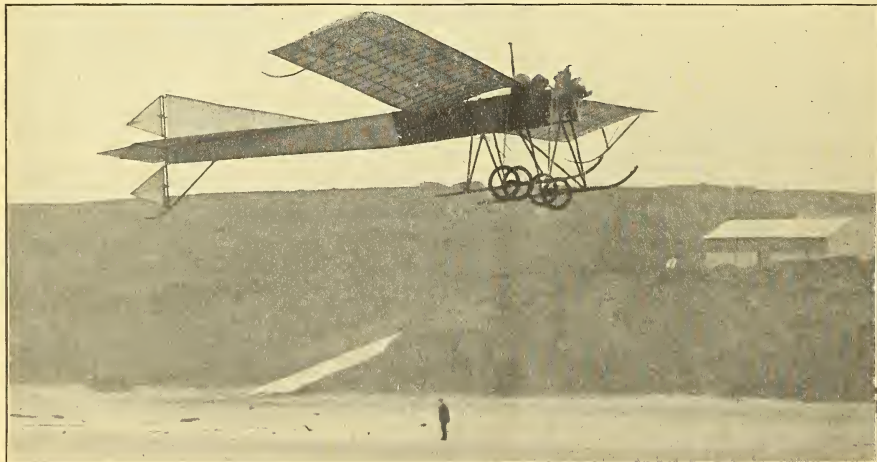
During the various delays of the start from Hendon on Monday, Mr. Barber put up a really excellent exhibition on one of his Type B military Valkyries. The get-off was remarkably good, the machine ascending very fast and, as usual, upon an even keel. Steady circles were described until the machine reached an altitude of well over 2,000 ft., the greatest height attained by any machine at Hendon that morning. Several fine *voix planés* were made, and numerous neat evolutions were carried out. Then Mr. Barber took a friend up for a passenger trip, during which an altitude of about 500 ft. was attained.

Grahame-White also took up the "retired" Baby, and proceeded to do some show flying, but flying even better than usual. He also took Lady Northcliffe for a passenger flight on the military Farman.

Hubert took up a passenger on the military Farman, and took a bad toss, breaking the chassis and propeller, damaging his planes, and getting a nasty knock on the head. He was taken home delirious and put to bed, but soon fell into a healthy sleep. The doctor reported that he would be all right after a day or two's rest.

#### The First Woman Martyr.

Poor little Mme. Denise Moore, an American lady domiciled in Algeria, has the sad distinction of being the first woman to be killed in an aeroplane. On the 21st she was flying a



The handsome Blackburn monoplane flying tests at Filey.



Farman biplane at Etampes, when she came down too much head down, and the machine turned over on top of her. *L'Auto*, of Paris, states definitely that her body was dragged from under the motor. Mme. Moore was a charming little sportswoman, who drove her own cars and piloted her own racing motor boat. About a year ago she took up aviation, and joined the Toller monoplane school at Etampes. Unfortunately, that school was broken up, and she took up the engine-behind type of machine, which has already caused so many avoidable deaths. One can only hope that the poor little lady's death may bring us one step nearer the abolition of this dangerous and absurd type of machine. It is said that Farman himself is experimenting with a tractor-screw biplane, and he has already built some experimental monoplanes, the latest being of the Nieuport type.

#### The Death of Mr. Gamsa.

Mr. Benjamin Gamsa, who was learning to fly at Hendon, was killed on July 19th, being run over by a motor car while cycling along the New North Road. Mr. Gamsa was understood to be in some way interested in a military Farman machine at Hendon, but was not a pupil at either the Grahame-White, Valkyrie, or Blériot schools. He was possessed of plenty of pluck, for his first passenger flight was with J. V. Martin on the old Grahame-White Farman, from Hendon to Brooklands, on a very nasty, gusty day.

#### A New and Cheap Willows Dirigible.

E. T. Willows, Ltd., have now in hand a dirigible which ought to be readily saleable. Mr. Willows, when in Town last week, called on *THE AEROPLANE* and described the machine as being a dirigible for a man of moderate means. It has a capacity of only 15,000 cubic feet, a maximum diameter of 17 feet and an overall length of 110 feet. With a passenger it is designed to rise to 3,500 feet, and without a passenger to 6,000 feet. By a very simple device the envelope can be detached from the *nacelle* in about 15 minutes, and stowed, without deflating, in a shed 18 feet square by 90 feet long, a very ingenious arrangement allowing the 20 feet of the tail to telescope without loss of gas.

The machine is fitted with a 20-24 h.p. engine, and should develop a speed of nearly 25 miles per hour. It is fitted with the Willows patent propeller gear which allows the angle of the propellers to be varied to pull up or down, so controlling the altitude without losing gas or ballast. The whole machine will pack into a case which can be carried on an ordinary motor car, and it will be sold at between £600 and £700. Such a machine should make a most amusing pleasure vehicle, and would be of very considerable use for military purposes, owing to its extreme portability, for with the new light hydrogen cylinders, enough gas to fill it two or three times could be carried on a motor lorry.

On July 16th Mr. Willows brought out his 50,000 cubic feet spherical for the first time. This is made of cotton, varnished with a special preparation of Mr. Willows' own. Starting from Wolverhampton at 5.5 p.m. in his shirt sleeves, owing to the heat, he finished eight miles from Aberystwyth at

9.30 p.m. in his overcoat, owing to the cold, such was the change in temperature. Yet he started with twelve bags of ballast and finished with six. A good record for his first trip as pilot of a spherical, and for the first trip of a balloon which is the first product of his first factory.

#### A New Monoplane.

One of the most interesting machines at Brooklands at present is the new Flanders monoplane, which should be out testing by now. Mr. Flanders' idea has been to produce a really decent machine which can be sold at a moderate price. He calculates that the machine can be sold without an engine for £150, and the engine may cost just what one likes to give. The Flanders machine is original in design and detail without being in the least freakish, and the fuselage is beautifully designed to decrease head-resistance. The engine, a 63 h.p. Green, is carried on tapered bearers, which materially strengthen the fuselage. Altogether, the machine is quite one of the nicest pieces of work yet produced at Brooklands.

#### From the "Daily Mail."

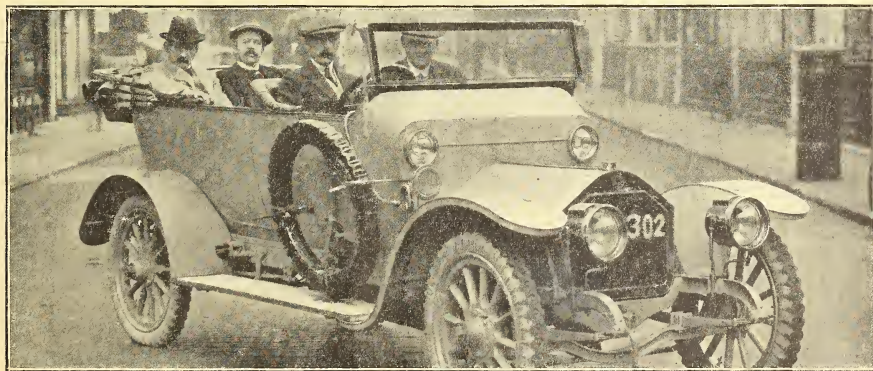
"Yesterday Mr. Vedrines, who is entering for *The Daily Mail* flying race, called at this office and made some inquiries of the staff. He pointed to, let us say, Nottingham, and asked which was the better way, fly to the right or fly to the left? The journalist had to acknowledge that he knew very little of Nottingham—seen from a height of some thousands of feet.

"But it is clear that a new kind of office will have to be established. There will have to be some handy place in Piccadilly or Regent Street where an airman can inquire as to the best way to take Dunfermline, and how to negotiate the difficulties and dangers of the suburbs of Manchester."

One is surprised to find anyone on the staff of our contemporary admitting, even to an unheard-of "airman" named Vedrines, that he is not omniscient. Still, if any information be needed on the physical geography of Great Britain, there already exists in Piccadilly an office which is ready to give it—namely, that of *THE AEROPLANE*, at No. 166.

#### Dual Generosity.

It is reported that the Duke of Westminster, who at one time contemplated learning to fly, has presented to the War Office a Voisin machine. This is understood to be a sister machine, of the "side curtain" type, to Mr. Moore-Brabazon's old original "Bird of Passage." It was bought by the Duke of Westminster early in 1910 and never used. It is also said that it was the Duke of Westminster who presented the Grahame-White "White Eagle" (Type XII.) Blériot to the War Office. Might we suggest that, if His Grace wishes to continue his gifts to the nation on the same lines, he might buy the Ader "Avion," which first flew in 1897, and he might supplement this with a gift of the original Henson-Stringfellow multiplane, if it could be sufficiently reconstructed to stand transport. Another interesting addition would be Mr. G. B. Cockburn's old "Father of All Farman's," which is now being decently disintegrated on Salisbury Plain.



A "Circuit" Car.—Just before the start of the "Circuit" this Bell car, driven alternately by Mr. P. Brocas-Parsons and Mr. Nason, of the Bell Agency Co., covered the whole course in five days. The last day's journey was Wells, Exeter, Salisbury, Brighton, and London (380 miles), covered in 11½ hours. The car was transporting representatives of the "Daily Mail" and "Evening News" to inspect the course, and it was its maiden trip.

## Concerning Mulliner's.

Last week it was noted in THE AEROPLANE that Mulliner's (Long Acre, and Northampton, Ltd.) are embarking seriously on the manufacture of aeroplanes, and that the works are in charge of Mr. A. G. Leeper. In consequence, several people have asked what has become of the Knyplane which was shown on the Mulliner stand at Olympia. THE AEROPLANE is authorised to state that, so far as the firm of Mulliner is concerned, the Knyplane no longer exists, and that the inventor of it is not in any way connected with the firm. As mentioned last week, machines on more or less orthodox lines are being made, and one of them, the Skinner monoplane, is now at Brooklands, where it has already shown considerable promise.

## A Fine Record.

It is interesting to note that of the British aviators chosen as pilots for the "Circuit of Britain," four obtained their early training and won their certificates on Avro machines, namely, Lieut. Parke, R.N., Ronald Kemp, Conway Jenkins, and Howard Pixton. Three of them have had bad luck, and one was unable to start, but none the less it is to the credit of the Avro school that four of their pupils should have shown sufficient ability to be selected as pilots in the big race.

## Something for Nothing.

Some time ago it was noted in THE AEROPLANE that Messrs. Pfeil and Co., of 145A, St. John Street, Clerkenwell, E.C., the old-established firm of tool makers, had begun to take an interest in aviation, and that they were specialising not only in all kinds of metal for aeroplane construction, but on a



special type of all-steel wire strainer, patented by Mr. Watts, who manages this department of the firm. This patent strainer is illustrated herewith, and the section shows how the swivel is arranged so that it cannot pull out, owing to the

steel ring brazed round it. It is obviously stronger than brass at the weight, and simpler to work than a right and left screw affair. The locking arrangement is delightfully simple, any pin or piece of wire being sufficient. A neat point is that the barrel is marked to show the last hole where the locking pin can be inserted to be consistent with safety. The firm's new list of tools and accessories is well worth having, and Messrs. Pfeil will be pleased to send it post free to anyone asking for it, and mentioning THE AEROPLANE.

## Sommer Progresses.

Roger Sommer has lately been experimenting with a very small biplane with the motor in front à la Avro—a step in the right direction.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address AILERON, London.

Telephone: Mayfair 6407.

## SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
3 months, post free	-	1 8	3 months, post free	-	2 9
6 " " "	-	3 3	6 " " "	-	5 6
12 " " "	-	6 6	12 " " "	-	11 0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittances above.

# Blackburn Monoplanes

## TUITION.

## EXHIBITION FLIGHTS ARRANGED.

THE

## Blackburn Aeroplane Co., Balm Rd., Leeds.

# MULLINER

# LONG ACRE, LONDON, & NORTHAMPTON, LTD

## Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON

Aeroplanes Built to Clients' own Designs. Best Material and Best Workmanship.

Clients' Personal Supervision Invited.

## SOLE AGENTS for NORMALE PROPELLORS.

The most efficient Propeller in the World.

## As used by M. Beaumont, the Winner of the CIRCUIT EUROPÉEN D'AVIATION

Telephone: 1987 Battersea.

Telegrams: "Aerocraft" London.



# E. T. WILLOWS, LTD.

## AERONAUTICAL ENGINEERS

### SPECIALITY: WILLOWS' DIRIGIBLES

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



**S** ECOND-HAND BAND-SAW, splendid condition, Tilting Table, Fences, etc., for hand or power. £5. —MALLOWS & Co., Adelphi House, Strand, W.C.

**60-80** H.P. E.N.V. ENGINE. Absolutely new. What offers?—A.M., 58, Brocklehurst Street, New Cross, S.E.

**50** H.P. ALVASTON ENGINE, perfect condition, fresh from makers'. Replacing by more powerful type. £50 for quick sale.—MALLOWS & Co., Adelphi House, Strand, W.C.

**T** UITION.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. See news columns. Four pupils entered in £10,000 race. —A. V. ROE & Co., Brownsfield Mills, Manchester.

**A** NZANI BLERIOT, second-hand, in good condition. LORD, The Grange, Barton-upon-Irwell.

### BUY YOUR PARTS FROM PRACTICAL MEN AND ENSURE DEPENDABILITY.

Every part we sell is of the best material and workmanship—designed by men in the forefront of aeroplane construction and flight. . . . Accessories of all kinds in stock ready for immediate delivery.

Telegraphic price list post free.

## A. V. ROE & Co.,

THE AVIATORS' STOREHOUSE.  
Brownsfield Mills, MANCHESTER.

## Beney Propeller.

SIZES FOR STANDARD  
MACHINES KEPT IN STOCK.

Particulars and Prices from—

### ROBERT BENEY & CO.,

7, CARLISLE STREET, W.

**L** ANARK AERODROME, Lanark, N.B.—Tuition by Certificated Aviator on genuine Blériot Monoplanes. Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

**B** ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

**P** ROPELLERS. —“Avro” Propellers of proved efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines. —A. V. ROE & Co., Brownsfield Mills, Manchester.

**M** ACHINES.—“Avro” Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market. —A. V. ROE & Co., Brownsfield Mills, Manchester.

**B** LERIOT cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

**CHAUVIÈRE'S FAMOUS “INTEGRAL” PROPELLERS** hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD and PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

## CLIFT AERO MAPS

Used in the “CIRCUIT OF BRITAIN”  
and all Cross-country flights.

Clift Maps were used by Vidart, Kimmerling, Valentine and others in the European Circuit.

## Clift Aero Compasses

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators.  
Necessities for the

“CIRCUIT of ANYWHERE”

For terms, write—

Eric Clift, c/o “The Aeroplane,” 166, Piccadilly, W.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

THURSDAY, JULY 27th, 1911

No. 8.

## LEARN TO FLY AT THE "BRISTOL" FLYING SCHOOLS

AT

SALISBURY PLAIN

AND

BROOKLANDS

The equipment is ideal, consisting of  
"BRISTOL" Biplanes fitted with  
Gnome Engines, and is so complete that

THERE IS NO WAITING  
FOR MACHINES

:: in the event of a smash. ::

Twenty-five  
per cent.  
of  
England's  
Certified  
Aviators  
are  
"BRISTOL"  
Pupils.

One  
"BRISTOL"  
pupil  
gained  
his  
Brevet  
after only  
three  
Flights.

The Tuition is in the hands of a number  
of the most skilled Aviators of the day  
so that

RAPID PROGRESS

is fully ensured.

SPECIAL TERMS TO NAVY & ARMY OFFICERS

Full particulars from . . .

The British & Colonial Aeroplane Co., Ltd.,

Telegrams  
"Aviation" Bristol

BRISTOL, Eng.

Telephones :—2 P.O.  
74 National  
3074 "

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

THURSDAY, AUGUST 3rd, 1911.

No. 9

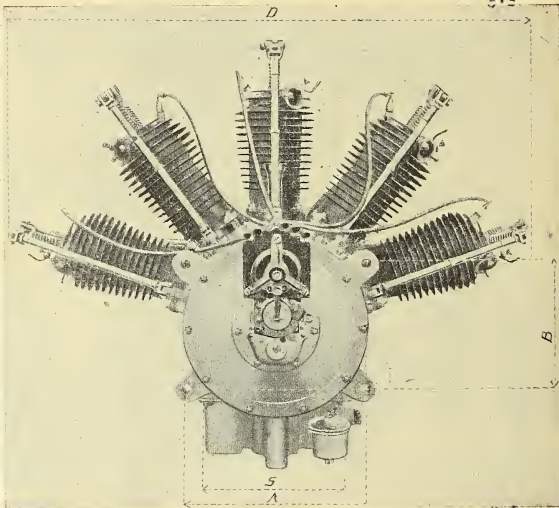
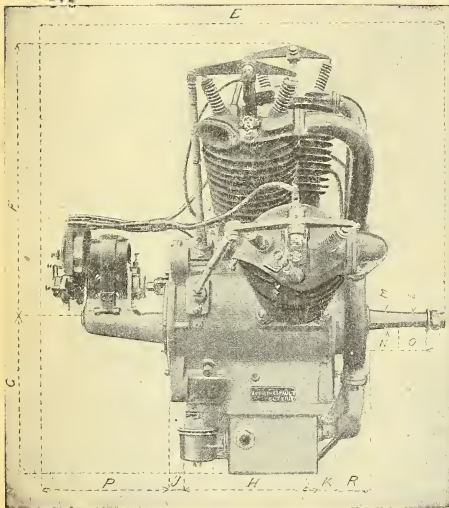
Enter "Vickers I."



The first flying photograph taken of "Vickers I.," with Lieut. H. E. Watkins at the helm. Taken on Sunday evening at Brooklands. Note the warp on the left wing as he begins to turn the corner to the left. In the distance is Pixton's military Bristol.

SMITHSONIAN INSTITUTION OCT 27 1959

# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40/50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

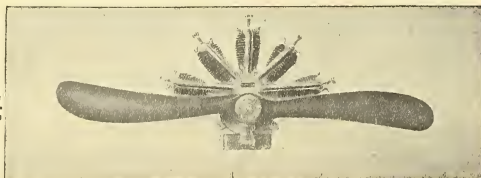
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL ... ..	195
THE CIRCUIT OF BRITAIN ... ..	200
AIR CURRENTS ... ..	204

	PAGE
SOPWITH IN AMERICA ... ..	205
THE WEEK'S WORK ... ..	208
THE BLACKBURN MONOPLANE ... ..	212

## Editorial Opinions.

**Why we Lost.** The chief reason why England has lost that £10,000 is that the best man won. There can scarcely be any doubt to-day that Lieut. Conneau, of the French Navy, is the finest cross-country flier in the world. He possesses in the highest degree all the qualities which go to make up a great cross-country flier, and he has very largely to thank his naval training for his success.

In the first place he is a marvellous navigator, and in the second his naval training has apparently made him immune to the air-sickness from which the ordinary land-lubber usually suffers when he gets up in a really bad wind.

Apart from these qualities, however, Conneau is a man who does everything thoroughly. He himself understands his engine as well as his best mechanic does, and he is just as capable of making repairs to his own machine. Besides, Conneau is simply a mass of muscle without an ounce of superfluous flesh, and seems to be a compound of steel and indiarubber. At the start of the race he was obviously thoroughly fit, and would probably have run any of the other competitors off their legs on land just as successfully as he did in the air.

His rival, Védérines, possessed just as many qualities of physical fitness and mechanical cleverness, and in these respects he is undoubtedly quite Beaumont's equal. Where he failed was simply in the matter of education. He was not able to find his way so well by map and compass, and, consequently, he was beaten, although he actually possessed the faster machine. Beaumont's victory was purely the effect of mind over mere brute force, Beaumont just having the luck to possess that extra quality of education which Védérines lacked.

So far as the British competitors are concerned one must feel extremely sorry for them, for, given equal opportunities, they were probably most of them as good fliers as the Frenchmen.

Valentine is an unusually fine natural flier, but he has not had even as much experience as Hamel, and though he really did extremely well, he had not the organisation behind him that the two Frenchmen had. It is probable, also, that he would really need a good deal more experience before he could possibly be the equal of either of them. Also, it seems quite probable that both of them had better machines and engines than his.

Hamel certainly flies a Blériot as well as Conneau, and he seems to have the same gift for finding his

way about the country, but he was physically unfit to undertake such a journey, and, even apart from engine troubles, which brought him down in the race, it is very doubtful whether at his age he would be capable of standing the appalling strain of such a three-day race as the two older Frenchmen did.

Astley, also, though his little "Birdling" monoplane was nearly as fast as Beaumont's Blériot, has not had enough experience of cross-country flying, and, besides this, he was not sufficiently physically trained to tackle such a race. He has before now complained to the writer of air-sickness on a gusty day, and in order to make a good show in the race he ought to have been flying steadily on a machine exactly like his racing machine every day for at least a month.

Pizey and Pixton have probably done altogether pretty nearly as much flying as the two Frenchmen, but they were betrayed by their engines, and, in any case, their biplanes, good as they were, would have been beaten on the score of speed alone by the French monoplanes.

Cody, though an experienced cross-country flier, so far as flying over country which is not an aerodrome is concerned, has not done very much actual place-to-place flying. Still, he found his road extremely well so far as he went, and would no doubt have got round all right if he had had the luck to get a spell of clear weather, and it seems quite possible that his biplane was as fast as any other biplane in the race.

Hucks on his Blackburn was certainly the victim of bad luck, for if his engine had held out he might have put up quite a good show, but he certainly has not had enough experience yet to make a first-class flier in wind.

Taking it all round we have been thoroughly well beaten on our merits, and, in the words of Kipling, "We've had a jolly good lesson, and it serves us jolly well right."

**How shall we Profit?** The next question is how to profit by the lesson. A good many firms have spent quite a lot of money over this race, what with getting special machines through in a hurry, and equipping break-down gangs on cars, and paying travelling expenses for assistants, and parcels of spare parts to the various controls.

In fact, so far as the British firms are concerned their organisation was quite splendid in every

respect, except so far as it concerned the aeroplanes and their pilots. There were tried pilots on untried machines, and untried pilots on tried machines. What seemed to be most lacking were experienced pilots on thoroughly tested machines.

The writer names no names and he makes no insinuations, but the unfortunate fact remains that if any one firm had started solidly three months ago with an ordinarily designed monoplane or fast biplane, had put up a good pilot, and had kept him doing nothing except flying from town to town round England in good weather and had on one machine, they would have stood quite a good chance of winning that £10,000. It is quite possible that the said pilot might have got somewhat "fed up" with continually flying from place to place while others were enjoying themselves among their fellows at the various aerodromes, but it would certainly have paid him and his firm at the finish.

The one man who had originally set himself to do this was Hamel, but the advent of the Gordon-Bennett Race took him away during part of the time when he ought to have been training, and the accident in the Gordon-Bennett did the rest.

To sum the whole matter up, we have let ourselves be left over this £10,000 just as we did over the first £10,000 for the London-Manchester flight, and have trusted to the British genius for getting through somehow, just as if we had been the War Office or Admiralty.

Think of it, ye British constructors! Twenty thousand British pounds have gone straight away to France. Think of how well the British aeroplane trade could have done with it. Think of the machines you could have built, and the experiments you could have tried, and the engines you could have bought. Probably you will go home and resolve to do better next time. But will there be a next time? Who is going to put up another £10,000?

**And the Next Time.**

If the spirit should move some munificent millionaire to put up another £10,000 for aviation, how will he do it? Undoubtedly the best thing for British aviation would be to put it up for a series of reliability trials between various important centres in England. That is to say, London to Brighton and back, £1,000; London to Bournemouth and back, £1,000; London to Bristol and back, £1,000; London to Birmingham and back, £1,000; London to Manchester and back, £1,000;

London to Edinburgh and back, £1,000 (the distance increasing with each competition); and a £4,000 prize for the constructor whose machines do best in the aggregate in all the competitions.

Even half these amounts would do quite a great deal to keep up the public interest in aviation, and to help the industry. The individual, or the newspaper (since it is the Press which seems to take the lead in these matters), who put up the amount would have, if anything, a bigger advertisement out of it than either of the other competitions, because the interest would be kept up much longer, and would be spread over a bigger area of country, and not confined to one long, narrow line of route.

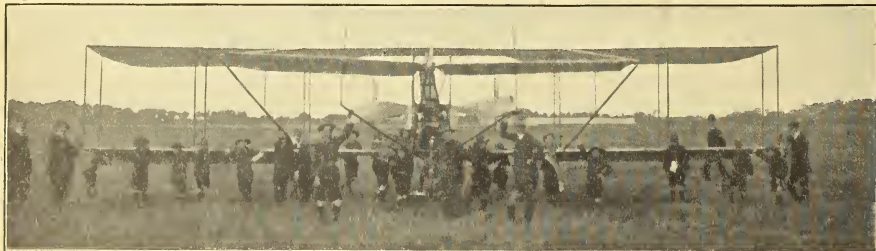
The competition might take the form of a series of races, but it would be very much better if it could be made into a reliability trial pure and simple, and it would be well if some form of marking could be arranged which would give an advantage to a really efficient machine as against the machine which merely got through by sheer engine power.

It has been suggested that the next big prize will be put up for a flight across the Atlantic, and though at first the idea seems somewhat fantastic, it is really nothing like so much so as one might imagine.

In the first place, the "Circuit of Britain" has shown that a machine can travel a thousand miles at an average speed of nearly sixty miles an hour. Now the distance across the Atlantic is roughly 3,000 miles, and at sixty miles an hour that only means fifty hours' flying. It does not seem as if it would be extremely difficult to build a machine which would carry a fifty hours' supply of petrol and two pilots.

Already we know that a scientifically-designed machine will do something like eighty miles an hour with a 50 h.p. engine, and it seems quite possible that a machine might be built with a very big engine to do something over eighty miles an hour and carry the necessary load of pilots and fuel.

One very important thing must be remembered, and that is that such a flight would be in many ways less dangerous than the "Circuit of Britain" if proper precautions were taken. In the first place, in picked weather, when storms were unlikely, the actual flying would be very much easier, for even if the wind were strong it would be considerably



Cody's machine at Hendon infested by the boy scouts, who got in everybody's way and, at Hubert's smash, had no waterbottles when really wanted to be of use.

# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz. :

35 h.p.	*60 h.p.	100 h.p.
---------	----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESSEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

# HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



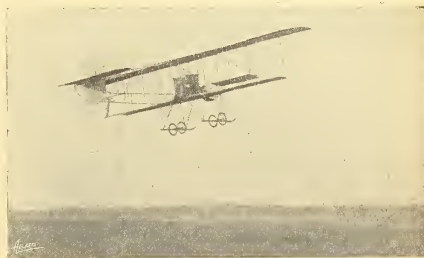
Eight Types

## Monoplanes

From **40** to **80** miles per hour

## Biplanes

From **36** to **50** miles per hour.



Catalogue on Application.

Winner of De Forest Prize.



# The Universal Aviation Co., Ltd.,

166 PICCADILLY, W.

Supply Aeroplanes and all Accessories for them

## MONOPLANES OR BIPLANES.

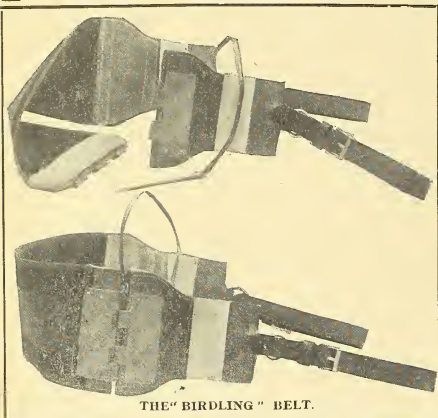
Engines and Propellers.

Timber, Steel Tube and Fabric.

Aluminium in Sheet or Castings.

Petrol and Oil Tanks and all  
other engine fittings.

Landing Wheels and Skids.



THE "BIRDLING" BELT.

## Aviators' Safety Belts & Helmets

THE BEST AND LATEST  
MAPS & INSTRUMENTS  
FOR CROSS-COUNTRY  
WORK.

Bolts, Nuts, Wires,  
Strainers, Eyebolts,  
etc. Tools of all kinds  
by the best makers.

Telephone : 5407 Mayfair.

Telegrams : "Birdling," London.

WHAT MR. GUSTAV HAMEL THINKS OF IT.



THE ROYAL AERO CLUB  
—OF THE—  
UNITED KINGDOM,  
166, PICCADILLY,  
LONDON, W.

1643 MAYFAIR

To the Universal Aviation Co. Ltd.,  
166 Piccadilly  
July 31<sup>st</sup> 1911

Dear Sirs

You will no doubt be glad  
to hear that your safety belt  
which I used on the Daily Mail  
Tribute, was of the greatest service  
to me, and I shall certainly  
never attempt a big cross-country  
without it  
Yrs Truly. G. W. Hamel

steadier than it was over the northern sections in the recent race. Secondly, it would be possible to fly very comfortably at a height of about 500 ft., and so keep fairly in touch with shipping on the way.

If the machine were equipped with proper floats, and if the course taken were along the regular steamship routes, it should be fairly certain in the event of involuntary descent to come down without any damage on the water, with a fair certainty of being picked up by a passing steamer within twelve hours, especially if the machine carried a proper system of signalling lights for use during the night. In fact, if a sufficiently large prize were put up it would be very short odds against it being won in the course of the next two years, and possibly even in less time.

As was only to be expected, various good friends of THE AEROPLANE have been inquiring tenderly as to the writer's opinion of rotary engines since the "Circuit of Britain" was won. In reply, it may be stated that that opinion remains unchanged. The race was won on rotary engines it is true, but, incidentally, those engines were picked and carefully tuned engines in the hands of absolute experts, and one of them gave much trouble.

At the other extreme we have Valentine's engine which let him down at Carlisle, Hamel's engine which also let him down, Audemars' engine which refused to go any further than Bedford, Pizey's engine which finished him up at Melton Mowbray,

Cammell's engine which burst a cylinder, England's engine which refused to get out of Brooklands, Astley's engine which petered out at Harrogate, Hucks' engine which let him down near Luton, and Weymann's engine which only got as far as Leeds. Does that strike anyone as being an extraordinary record of excellence?

It is true that none of the others have got anything much to show for all their trouble, but, at any rate, their record is really no worse than those quoted. The unfortunate fact is that out of all the rotary engines only two got to the finish without serious engine trouble, and one of them had quite a fair share of it.

It must be said in common justice that Cody certainly never had any trouble with his engine, but only with his radiator, and Reynolds' trouble was with the carburetter, and not with the engine itself. Jenkins and Kemp, the only two other users of British-built engines, smashed their machines before they started, and in neither case was it due to engine trouble, as was the case with several of the other competitors smashed up either at, or soon after, the start owing to failure of foreign engines.

That two men managed to get through out of all that lot without serious accident to their engines or machines is no more argument in favour of adopting those engines and machines universally as the last word in aviation than is the fact that M. Blondin walked across Niagara on a tight-rope an argument in favour of the abolition of footpaths in favour of continuous tight-ropes for foot passengers along all our main thoroughfares.

## Our Enlightened Press.

Another paper has now broken out on the lines of the *Evening Times*, but this time editorially, and not through the medium of a "correspondent." *The Bystander*, which under ordinary circumstances is quite a nice paper, has indulged in a petulant outburst, which has been sent to THE AEROPLANE by one of our pilot-aviators, who is certainly a very fair specimen of a good sportsman, and is therefore entitled to be heard on the subject.

*The Bystander* leader reads thus:—

### "THE GREAT AIR RACE.

"And the airman? What manner of man is he? Opinion seems divided whether to regard him as sportsman, mechanic, or—boomster. I am inclined to think that that which he is least is the first-named. He has little or no grim determination to be up and off at scheduled time, crowd or no crowd. Inquiry leads to elicit why, at Brooklands on Saturday, in what seemed to be perfect weather conditions, an hour's postponement was made 'by request of the aviators.' If there was much wind, the sweltering crowd was painfully anxious to know where the airman had discovered it. And if, at four o'clock, there was more than there had been at three, one accepted the supposition with perspiring scepticism.

### "THE CALLOUS PUBLIC.

"One of the most significant features of an air race start is the complete lack of interest with which the crowd regard an aeroplane once it is well up. At the start, the airman is Beaumont, or Védérines, or Cody—a live, heroic personality. A few minutes and he and his plane are merged into one, and of no more consequence to us than the birds whom they have frightened to earth. To-morrow, perhaps, we shall be uninterested even in their starting. To be an airman, then, will be to be the farthest from human kind. A deserter of earth, merged in a non-human machine, he will be out of mind even before he is out of sight."

The covering letter says:—

"Sir,—I enclose a cutting from the current number of *The Bystander*—quite an 'air current.' I wonder whose opinions the writer quotes when he says that aviators are more mechanics or boomsters than sportsmen?

"There are aviators, we know, who were mechanics before they were aviators, but every aviator who is practical is a bit of a mechanic.

"We also know of aviators who are 'boomsters,' but, to quote *The Bystander*, 'what manner of men' are Morison, or Barber, or Hamel, or many others? Are they not sportsmen?"

"Our Army and Navy fliers, too, are they mechanics or boomsters? The remark about being 'up and off at scheduled time' needs little comment, neither do his remarks about the 'perfect weather conditions.' They are sufficient to show his absolute ignorance of the subject he is writing about of the 'He might learn wisdom by reading the account of the start in THE AEROPLANE. Perhaps this writer too, might like a trial trip with Mr. Gilmour on a nice hot afternoon at Brooklands, and so sample a few of its best reams."

"The remainder of the article about the 'callous public' is beyond me altogether. What about the thousands who watched the race between the different stages and controls? I have underlined two sentences, the composition of which, I think, must be put down to the heat. In fact, one reads the whole article with perspiring wonder.—H. DE GREY WARTER."

This letter supplies quite adequate comment, and all THE AEROPLANE can do is to extend to the writer of the article a very hearty invitation to visit Brooklands and become better acquainted with the aviators who are at work there. The present writer will be pleased to act as guide if *The Bystander* man will accept, and, given a decent day, a passenger flight can be promised him.

### FROM EDINBURGH.

Mr. G. S. Wilson, of the *Edinburgh Evening News*, writes, apropos of the "Circuit": "There is one good thing about this race. An enormous number of people have been converted to the belief that there is something in aviation. Many scoffers here have been converted by the sight of the machines sailing down apparently under the most perfect control. The landing ground here was none of the best, being right at the foot of the Pentland Hills and very liable to gusty winds. Everything went off well, however, and the only pity is that a few more fliers did not get through to educate a few more people. Hope THE AEROPLANE is doing well. It is very good."

## The End of the "Circuit."

TALES OF THE HAPPENINGS, AND FIGURES OF TIME AND SPEED.

Last week's tale of the "Circuit" had perforce, owing to the exigencies of weekly newspaper work, to leave off with part of Tuesday's story still untold, so let us resume there.

"Beaumont" left Edinburgh at 3.10 a.m., flew through rain and mist to Stirling, arriving at 3.56 a.m., left at 7.25 a.m., and got to Glasgow at 8.10 a.m., where he was practically an hour in front of Védérines. Leaving there at 9.3 a.m., he flew to Carlisle by 11.10 a.m., left there at 12.27, and, instead of keeping to the direct line, followed the wrong railway, and went round by the Midland to Settle, where he came down owing to engine trouble.

He told me on his return to Brooklands that he was nearer death there than ever in his life before, owing to rain, mist, and wind combined, but by going round by Settle he escaped the dreaded Shap, where, according to Herbert-Spottiswoode and Harold Perrin, who drove over the summit during the day, the wind and rain were terrible even in a motor. The few miles east and the intervening hills probably saved "Beaumont" a little of the worst of it.

From Settle he wired to Manchester for help, but, while waiting, made his repairs himself, and actually flew over the relief car going to his help. He arrived at Manchester at 4.47 p.m., left at 5.42 p.m., and finally got to Bristol without further trouble at 8.37 p.m.

Védérines left Edinburgh at 3.25 a.m., got to Stirling 4.4 a.m., left 7.30 a.m., and got to Glasgow 9.4 a.m. after losing his way and having to come down to ask where he was. So far as I could gather from him in his excitement at Brooklands, it was this delay which he blamed for losing him the race. Apparently his map put the Paisley landing place on the wrong side of the railway, and so he could not identify his whereabouts.

He left at 10 a.m. and got to Carlisle at 11.58, left at 12.45, came down at Eccleston for petrol, landed at Manchester at 5.20 p.m., left at 6.10 p.m., and got into the Bristol landing place at 10.7 p.m., after landing only a mile away on the Bristol Company's testing ground. He was misled by the bonfires on the proper ground, and came down on what looked like a good, clear place near it. It took him some time to find out where the right place was, and then he had to start up again and get there, all the delay counting as flying time.

Valentine left Edinburgh at 7.40 a.m., being delayed by engine troubles. He got to Stirling at 8.8 a.m., left at 9.15 a.m., and came down at Castlecary, 6½ miles south of Falkirk, having lost his way in a rainstorm, dodged factory chimneys, and missed falling into a canal by the simple process of running into a hedge before he got there. He smashed his propeller and rudder, but repaired the latter and replaced the former, and ultimately got into the Glasgow control at 8 p.m.

Hamel left Newcastle at 4.48 a.m., was blown down at Innerwick, near Dunbar, started again at 10.40 a.m., but was blown down again near East Linton, in Haddingtonshire; finally he reached Edinburgh at 7.57 p.m.

Cody made a good start from Harrogate at 4.51 a.m., and came down at 7 a.m. near Langley Moor, in Durham, to find out where he was. That two-hour flight and the performance the previous day shows there was nothing wrong with the Green engine, as some of its detractors would have us believe. The only engine trouble was slight overheating, due to the fact that the radiators were very obviously too small, and, to my mind, not at all the right type for aerial work. In landing, Cody damaged his propeller and chassis, so he had to motor into Newcastle and wire to Farnborough for fresh parts. Hard luck on the plucky old sportsman that he could not have the unlimited spares and assistance that some of the others had.

Pizey started from Melton Mowbray and got away all right, but his Gnome went wrong and let him down just as he had cleared the roof of a house.

Astley got away from Irthlingborough and landed at Harrogate at 7.35 a.m.

Pixton's smash at Spofforth was too bad for repair, so the remains of his machine were packed up for return to Brooklands. This, be it noted, was Pixton's first bad smash, in spite of all the flying he has done in high winds. His account of his smash is as follows: He started from Hendon with 18 gals. of petrol, and at Melton Mowbray, exactly halfway to Harrogate, had 9 gals. left. He put in 4 gals. of petrol, so that he should have had 4 gals. over at Harrogate. Suddenly, however, about four miles from Harrogate, his

engine shut up shop. He started a sharp, spiral glide to the left, and, when about 10 ft. off the ground, the engine suddenly started again. Pixton, having seen Harrogate only four miles off, tried to lift her out, when the engine suddenly struck again. Pixton put her nose down to stop her, and could not flatten her in time. He hit on the turned-up skids, and drove them through the planes. Pixton was not thrown out, and escaped with a sprained ankle, a cut finger, and a cut in the back.

De Montaleant's smash at Wetherby was rather serious, and entirely due to the pilot's lack of experience. Mr. Arthur Turner told me later on that De Montaleant came down on the race course merely to ask his way. On restarting, instead of going up high to get a fair start, he simply went out over the trees as Blanchet did at Brooklands, and, on clearing them, he found himself over a little valley, into which he dropped. Owing to starting out so low, he fouled the tops of some trees and pancaked down into them, smashing up fairly badly, but he managed to repair and get on to Harrogate on Wednesday.

Blanchet did much the same thing, for, on leaving Strealey, he also came down in some trees almost as soon as he had started. These two smashes are no discredit to the machines, for, as Mr. Turner explained, the pilots had only had experience of flying over the flat country round Douai. Nearly all the Bréguet pilots are French officers, and none of them were available, so Bréguet had to put up anyone he could, and neither of them were much good. That neither of them was injured is another testimony to the safety of the engine-in-front type of machine.

The Etrich smash was worse than was thought at first. That excellent sportsman, Bellairs, hearing of the Austrians' troubles, started out from Town on Monday morning to their



Photographs by courtesy of the "Edinburgh Evening News."  
AT EDINBURGH: (1) Beaumont arrives. (2) Védérines landing. (3) Védérines arrives.



**CIRCUIT OF GREAT BRITAIN.**

The Marvellous  
**BLÉRIOT**  
**MONOPLANE**  
 still in front.

**BEAUMONT** covers the 1,000 miles  
 without any repairs of any sort.

*For Catalogues, Tuition, and all Particulars apply to*

**L. BLÉRIOT** (Sole Manufacturer), Belfast Chambers, 156, Regent St., London, W.

NORBERT CHÉREAU, General Manager,

Telegrams: "Blérioplan, London."

Telephone No.: 14827 Central

**SUCCESS**

Britain's most successful  
 Aeroplane is unquestionably the

**Avro Biplane**

Small and compact, requiring small engine power, the cost of upkeep is reduced to a minimum. Complete with 30-h.p. "Green" Engine for passenger **£600** for cross country.

Small upkeep. Small size. Small H.P. Everything halved but efficiency.

*Flight*, June 10th, 1911, referring to the Avro Biplane at Brooklands:—

"Its speed, small size, and smart appearance being specially noticed by the spectators."

**A. V. ROE & CO.**

The Aviators' Storehouse,  
**BROWNSFIELD MILLS,**  
**MANCHESTER.**

Telegrams—Triplane.

Telephone—698 Central.

**THE NEW TYPE B****VALKYRIE**  
**MONOPLANE**

HAS NOW BEEN TESTED AND HAS  
 PROVED AN UNQUALIFIED SUCCESS

**Especially designed for Military Service.**

THREE TYPES: 40-80 miles an hour.  
 From **£280.**

ALL THREE TYPES FLYING DAILY AT HENDON.

*Tuition Free to Purchasers. Particulars on request.*

**THE AERONAUTICAL SYNDICATE**

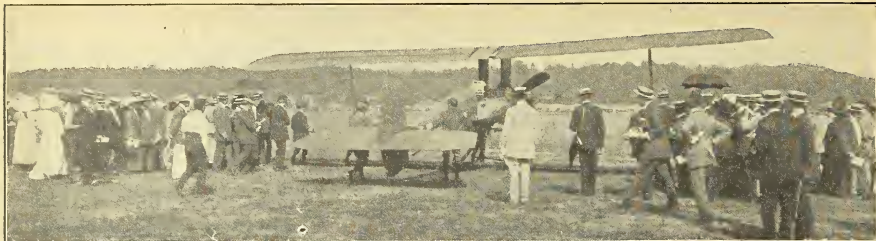
Established March, 1909,

J.T.D.,

At the Flying Ground, Collindale Avenue,  
 West Hendon, N.W. (6 miles from the  
 West End)

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.



Blanchet's Bréguet going up to the start.

help with mechanics and spares. He found them down in a cornfield, and incidentally smashed his new Mass car by falling into a ditch while getting to them. It appears that a water-pipe broke, and, presumably owing to the piston seizing up, one of the cylinders cracked round the base below the water jacket. Fortunately it held in its place, or the brave Banfield would have had a bad time in his seat next the rear cylinder. The field in which they came down was on the slope, and the huge brute tore down the hill till it slewed sideways, yanked the chassis from under itself, and turned over sideways, breaking up a wing, and various appurtenances. By good luck neither Bier nor Banfield was hurt in the least.

#### Wednesday's Flying.

Wednesday's finish was singularly uneventful. "Beaumont" left Bristol at 4.50 a.m., Védérines at 4.52. They got to Exeter at 6.11 a.m. and 6.9 a.m. respectively. "Beaumont" left at 7.5 a.m. and got to Salisbury Plain at 8.32 a.m. Védérines left at 6.47 a.m. and arrived at 8.10 a.m. "Beaumont" left Salisbury at 9.47 and arrived at Brighton at 10.59 a.m. Védérines left at 8.43 a.m. and arrived at 9.57. Both had borrowed time at Bristol out of their "rest" time, but "Beaumont" had borrowed most, so he was able to leave at 1.28.15 p.m., and arrived at Brooklands at 2.8.6 p.m., coming in high up and landing near the sheds. Védérines could not start till 2.41.32 p.m., and he arrived at 3.19 p.m., coming in low down and landing far over by the river.

The arrival of the two men was typical of them. "Beaumont," polite, cheery, and affable. Védérines as savage as ever, swearing at his luck, the weather, the country, and most other things. When the crowd (only some few hundreds in number) wanted to "chair" him in to the sheds, he dashed the chair to the ground in his temper, and refused to be comforted. Be it said, however, that when he had received Lord Northcliffe's £200 consolation prize the poor little man cheered up and became once more something like the good little *mécano* we knew a year ago.

#### The "Also Rans."

Hamel left Edinburgh at 3.38 a.m. and got to Stirling in

32m. 9s., which was faster than any of the others. Leaving at 5.45 a.m., he came down at Clarkson with engine trouble, and did not get to Glasgow till 11.40 a.m. Going on towards Carlisle he came down at Thornhill, in Dumfriesshire, at 2.40 p.m., damaging his chassis and hurting his arm.

Cody got on to Newcastle, where he gave exhibition flights on Thursday, and arranged to fly thence to Edinburgh. As there was no money prize left to be won he was well advised to go on round the course in his own time.

Valentine pluckily went on from Glasgow to Carlisle, and came down forty miles south of Carlisle with engine trouble. Astley, at Harrogate, made a start in the morning, got off well, and had just cleared the crowd when his *Gnome* went wrong, and let him down on the unoccupied part of the "Stray" without hurting anyone. After that he gave it up as a bad job, and made up his mind to fly back to Brooklands. He told me afterwards that his whole trouble was that the castor oil he got at Hendon on the Monday morning was of such quality that it stuck up everything with soot, and when he landed at Harrogate even his valve-rockers were jammed with it. He spent all Thursday cleaning up his engine, and on Friday flew back as far as Nottingham, where he came down owing to air-sickness, and came on to London by train for Lord Northcliffe's lunch at the Savoy, returning later to Nottingham to fetch his machine.

Reynolds' smash at Harrogate on Tuesday was caused by his trying to get away while the carburation was still wrong, with the result that he found himself in the critical position of either pancaking into the crowd or doing an impossibly sharp turn back into the ground. He naturally side-slipped on to his wing-tips and smashed the machine up badly. Anyhow, he showed on Monday that the Howard-Wright-E.N.V. was quite fast for a biplane, and that it could land in a cornfield without smashing anything. While he was there he was greatly assisted by the members of the Conisborough Aeroplane Society, who guarded his machine all night.

#### Thursday's Doings.

On Thursday Valentine made an attempt to leave Carlisle, but had to return with *Gnome* troubles. Hamel was still



Sir George White at the Bristol Control. On his right Gordon England, and on his left Mr. White Smith, Secretary of the Bristol Company. }



repairing. All the rest made up their minds definitely to retire, and all controls behind Edinburgh were closed.

De Conneau was received by the King at Buckingham Palace, and was given an audience of nearly half an hour.

#### At the Savoy.

On Friday those of the competitors who were able to be present were entertained at lunch at the Savoy by Lord Northcliffe, who presented the £10,000 cheque to de Conneau, and made an excellent speech, once more emphasising his faith in aviation, though he, to my mind, laid too much stress on the military side of aviation, and omitted all mention of the sporting side. His lead was followed by other speakers, one of whom even hazarded an opinion that we might yet send air-fleets to battle as worthy allies of France. De Conneau's speech was a model of good-fellowship and modesty, and little Védérines, who had by then quite recovered his equanimity, treated us to a finely-delivered *gasconade* on what he had done, meant to do, and could do, including a magnificent picture of destroying a hostile ironclad by dropping many kilos of dynamite on her decks. Védérines is nearly as fine an orator as he is a flier, which is saying a good deal. Hamilton Fyfe, of the *Daily Mail*, sized the two men up finely when he said "one is a steel blade, the other is a firework." All the same, one would have to go a very long way to find a better flier than the said firework.

#### The "Marked Parts."

Really the most remarkable thing about the flight is that both the leaders brought home *all* the marked parts of their machines intact. "Beaumont's" machine looked the more weather-worn of the two, owing to the fabric on the wings having slackened off owing to alternate sun and rain, but otherwise the machine was in fine condition, and the engine looked beautifully cared for. Védérines' wings were as tight as a drum, and looked quite new, being made of some special dead white fabric; on the other hand his landing axle was badly bent, and would not have stood many more descents, even voluntary ones, and his valves were badly gummed up.

#### The "Still Runnings."

On Friday Cody left Newcastle at 3.45 a.m. and landed at Edinburgh at 8 a.m. Leaving there in the evening he reached Sterling, 31 miles, in 40m., and ran into the fence on landing, but without doing any damage.

Valentine left Carlisle at 3 p.m., and wisely stuck to the coast line instead of taking risks over the mountains. He came down near Workington, and, leaving at 7 p.m., passed over Morecambe, landing ultimately near Widnes at 9.15 p.m.

On Saturday Cody got to the Glasgow control at 6.50 a.m., after a good night in very bad weather. Valentine managed to reach Manchester, and Hamel wisely made up his mind to retire. He was wise to do so, and he will be wiser still if he takes a rest of a month or so before flying again. He is young enough to wait awhile, for he will yet do something big.

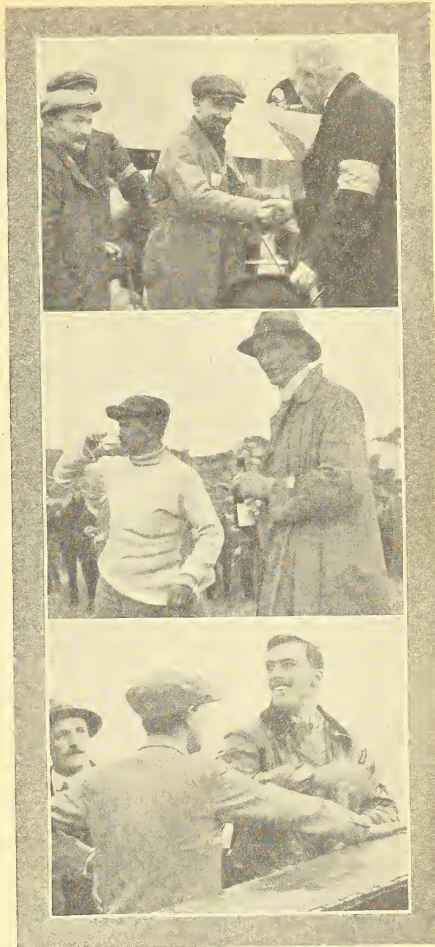
The same day Astley came back from Nottingham, but was blown off his course by the east wind and landed at High Wycombe. The afternoon was so windy that he left his machine there till Monday morning, on which day he flew direct to Brooklands.

On Monday Cody reached Carlisle after an early morning start and a fine voyage. Valentine left Manchester at 5.40 a.m., came down near Madely in Shropshire at 7.20 a.m. for petrol, and got as far as Gloucester, where he stayed the night.

#### Flying at Colwyn Bay.

Mr. R. A. King, who has done a number of flights from Freshfield round the Liverpool district, has been giving exhibition flights recently at Colwyn Bay. On Sunday, the 23rd, he made his first flight and flew round the Bay, landing on the shore near the pier. After waiting there half an hour he returned to his shed, flying at a height of about 300 ft. On the following day he could only manage to fly round the ground as the wind was blowing down from the mountains from the west and south, making difficult gusts and *remous*.

During the rest of the week there was no flying until Friday last, when, at 6.30, he rose from the sheds and encircled the ground, but could not rise above the telephone wires; consequently he came down after rather a desperate effort. He then had the Farman pulled to the far end of the ground and rose against an east wind, clearing the wires about 60 ft.,



Photographs by courtesy of the "Edinburgh Evening News."  
THE WINNERS: De Conneau, Védérines, and James Valentine

flew over the golf links, and landed near Rhos pier, after which he made seven or eight flights round the bay, one of them being a mile out to sea. At 7.30 p.m., the sun having lost its power, the air became more buoyant, and he rose from Rhos pier, flew over Colwyn Bay pier to Old Colwyn, turned there over the sea, and flew straight back over Rhos pier at 300 ft., then over the sea round the Little Orme, over Llandudno pier at 800 ft., round the promenade, and back over the top of the Little Orme, making a perfect landing.

Mr. King tells THE AEROPLANE that he has found it very difficult to get his machine to lift in that part of the country until the sun loses its power, but he may rest assured that throughout this hot weather everyone else has found the same trouble, some people ascribing it to the thinness of the air owing to the heat, and others to the upsetting of the carburation in the motors or simply to over-heating.



## AIR CURRENTS.

## The Editor, Myself and my Report.

(Editor in shirt sleeves, tweed trousers, and arm chair. Thermometer very mercurial. Elegant useless youth enters R.P.)

Ed.: Well, where's your stuff?

E. U. Y.: My stuff?

Ed.: Yes, your notes about Brooklands. Buck up, man, and hand them over.

E. U. Y.: I say, I haven't written them yet. And if I had, I should strongly object to your calling them stuff.

Ed.: Confound it, man, what do you think you come into this office for?

E. U. Y.: I don't know. It's beastly hot— All right, be calm. I'll write something now. Start in orthodox fashion, I suppose. Eh?

Ed.: Start any way you like. Get over there, do about 500, and leave me in peace.

E. U. Y.: I say, will the size of my writing make any difference to the finished article. . . . Well, of course, if you won't tell me, you needn't.

(Five minutes' silence, with typewriter obligato in next room.)

E. U. Y.: I say, how's this for the 50: Apt alliteration's artful . . . and all that, you know.

(Reads a blue pencil scrawl with difficulty.)

H'm! H'm! The er— The er— The scene at Brooklands yester-e'en was one of colourful animation. Old Sol glowed goldenly on the gorgeous galaxy of gaily-gowned and grilling gentlewomen. The sparkling toilettes lent lustre—

Ed.: Man, man, you're a fool. The Lord be gentle with you; what the devil do you think you're writing for? Write me something short and concise, not a lot of blithering rot.

E. U. Y.: Blithering rot! I like that. I'll bet you half-a-crown— I say, don't chuck your pen about that way. I'll short and concise it for you, and, let me tell you, I don't like the colour of your . . . sleeves one little bit.

Ed.: Look here, either you write or get out of this office.

(Prolonged silence.)

E. U. Y.: H'm! H'm! How's this? (Reads.) 12.45.—Arrange with friend for transportation to Brooklands, and discuss Bronck cocktail: 1/2 gin (dry), 3/4 mixed Vermouth some orange juice, tres chaude matiere—

Ed. (interrupts): D— it all, I didn't ask you to write a cookery book.

E. U. Y.: It's not cookery, it's cocktail, and don't interrupt; it's short and concise enough for an Irish policeman.

E. U. Y. (proceeds with reading): 1.30.—Lunch.

Ed.: Yes, but—

E. U. Y.: Shut up.

2.30.—Ready to start.

3.57.—Start

3.58.—Stop for blown-off hat.

3.58½.—Proceed.

4.30.—Stop Hampton Court. Chauffeur adjusts brakes; we visit hotel.

5.0.—Proceed.

5.15.—Stop pick up mechanic in view of still-defective brakes.

5.20.—Proceed with additional staff.

5.27.—Parley with policeman.

5.29.—Proceed at reduced speed.

5.45.—Stop Heath Club. Entrust car to staff.

5.50-6.10.—Attend to personal wants.

6.10.—Proceed on supplementary car.

6.25.—Arrive Brooklands.

6.30.—Sit on grass.

6.33.—Get up again.

6.34-6.45.—Investigate all hangars for 1½ pump-clip; unsuccessful.

6.45.—Start for Weybridge Station

7.—Catch train to town—crowded.

E. U. Y.: There, now, what about short and—What's the matter? Trying to sneeze?

Ed.: No, no, man; but what about the flying?

E. U. Y.: I know, but there wasn't any before the 7 train.

Ed.: What do you think you went to Brooklands for, pick daisies or scent the savour of the sewage swamp?

E. U. Y.: Very elegant indeed. Don't I tell you they didn't have any in time for the 7 train. How do you like my check trousers? Six-inch scale, you know—

Ed.: Get out of this office—

E. U. Y.—Right ho! I'm going. About sick of this newspaper business. But if you think that because you sit around in your shirt sleeves and sign a lot of letters that— All right, I'm gone, and mind you don't go off with a report.

(Exit.)

R. G.

## The "Aero-Clerical."

["Sole makers of the 'Aero' folding felt, the 'Aero-Homburg' folding felt, and the 'Aero-Clerical' hat—all the lightest of their kind in the whole world."—Hat-makers' Advertisement.]

The above advertisement has inspired an elderly but sporting clergyman in Sussex to burst forth into song as follows:—

It was the days of "Aeroplanes"—  
Things that out-pace the pace of trains;  
"Monoplanes," "Biplanes"—sailing along  
Merrily, until the thing goes wrong;  
Then from mid-air they may tumble down—  
And, if in mid-Channel they fall, they may drown!

Now, we've invented a brand-new "hat,"  
"Aero-Clerical"—"round" or "flat";  
"Light as a feather," we beg to state,  
Two-and-a-quarter ounces weight;  
Whilst "Clerics," in common ones, simply melt,  
They have no such feeling in these, tho' "felt"!

Whilst summer scorches, and days are warm,  
Fill up, and send in, our "Order form";  
"Size" or "shape," as you may prefer—  
Can we at once induce you, sir,  
To try our "Aero-Clerical" hat—  
Five-and-sixpence—and cheap at that?

"Horne and Brothers," please understand,  
"Hatters and Outfitters," in 'the Strand,'  
Will send you a specimen—yes, "post free"  
"38" and "W.C.";  
And if, to your taste, it should something lack,  
We are perfectly willing to "take it back."

"Waterproof," even in heavy rain—  
"Proof" against "water-under-the-brain";  
Then, it will keep your head quite cool,  
Whether you go to church or school;  
Or in your "bag" you can "pack it flat"—  
Our "Aero-Clerical" Folding Hat!

It's made of "really dependable" stuff—  
Smooth and silky to feel (not rough);  
Beneath its substance, so light and soft,  
Your clerical instincts can soar aloft;  
No fear of collision, "bust-up," nor "smash"—  
(Notice—"Our business is strictly cash".)

Send then, send, to the "Brothers Horne,"  
If your old hat's stuffy or somewhat worn;  
The "next post" brings you, quite neatly packed,  
Measure, to fit you at once, exact;  
"Five-and-sixpence"—yes, cheap at that,  
Write for our "Aero-Clerical Hat"!

A. J. R.

\* \* \* \* \*

During the Bournemouth flying meeting last year a gentleman, passing through a village near Bournemouth, asked a villager if Morne had been out that way. He replied: "More rain, no, and we don't want none, neither, this side of harvest."

\* \* \* \* \*

Whilst a well-known aviator and his friend were waiting for their train at St. Pancras, the aviator remarked: "The chap that designed this place didn't know much about aeronautics. That plane," pointing to the roof, "has got too much camber."

\* \* \* \* \*

Enthusiastic Girdle, as Hamel glides to earth: "Isn't he sweet? Look at him doing a volcano!"

## The British Crew in America.

Writing from New York, on June 16th, J. Dudley Sturrock, Mr. T. O. M. Sopwith's business manager, says:—

"As you know, Sopwith had bad luck to start with, as he smashed his 70 h.p. Blériot at Minneola (which is *not* in Florida, as the English papers had it, but on Long Island, near to Belmont Park). He had been flying it very nicely for a first attempt, but the smash was so complete that we decided to send it straight back to France. We expect it out here again before August.

"Tommy gave his first exhibition flights at Point Breeze Track, Philadelphia, and was very successful. He started well by flying over the city on the first day and round the City Hall, a very tricky flight, as he had to pass over buildings for about ten miles. On the following day he flew over to the Navy Yard, and called on the Commandant, who was very much interested, as it was the first demonstration of the practicability of the aeroplane that they had had.

"We went from Philadelphia to Columbus, Ohio, where a meeting was held from May 29th to June 3rd. Parmalee 'on a Wright, Earle Ovington on a single-seater 70 Gnome-Blériot, Baldwin on his 'Red Devil' biplane, with Sopwith on his Howard-Wright biplane, were the competitors, and it went off very successfully but for the fact that the promoters were utterly ignorant of the organisation of an aviation meet, and we all had to put our heads together at the eleventh hour and help them out.

"It was our first experience of a Wright machine in the air, and we were very much impressed with Parmalee's management of it. It is certainly a wonderful machine for spectacular exhibition work, and the way Parmalee was able to bank it was a revelation to us.

"Earle Ovington has just arrived from France, where he took his *brevet* a month or so ago; he is a very daring flyer, and with a little more experience he ought to do great things.

"Captain Baldwin is the veteran balloonist and parachutist who has exhibited a good deal in past years in London, and his small, metal-framed biplane is a very fast proposition, and his flying speed is about 60 miles per hour. Baldwin packs the whole outfit in a box like a good-sized trunk, and carries it about the country as excess luggage!

"While on the subject of the Columbus meet, I am sure you will appreciate the following somewhat ingenious methods taken to discourage the 'free list' outside the aerodrome. A main road ran along one side of the field, and as the management considered that too many of the rank and fashion were seeing the show for nothing from their automobiles (not motor cars out here, please!), they hired the municipal road scraper and sent it up and down the road all the afternoon, raising a continual cloud of dust, thereby making the said prominent members of Columbian society hunt for the necessary dollars to buy seats in the grand stand!

"Another little device, which you might recommend to Ker-Seymer and other organisers, was the provision of a number of targets in a field next to the aerodrome, which a

number of the aforesaid residents had selected as a good place for tea during the days of the meeting. These targets had a large notice to the effect that firing practice would be indulged in by the aviators at irregular intervals, and consequently the field would be unsafe during the meet.

"I suggested hiring a ferocious bull to do a turn in the same field, but the proposition had such obvious dangers for Baldwin's 'Red Devil' biplane—which has a disconcerting habit of flying at 60 miles per hour at a height of 15 to 20 feet off the ground—that it was promptly howled down!

"I had nearly forgotten another corner of the field, where there was a broken fence where the 'free list' had congregated. The management thoughtfully provided a two-inch hose, which played a stream of water on the gap in the fence. Presumably the fact that the water was not iced did not please the crowd, as it rapidly faded away.

"We unfortunately had a repetition of the Dover trouble on the last night of the meeting. A thunderstorm came along which wrecked the tent in which the machines were housed, and Sopwith's Howard-Wright was considerably damaged. [As already noted in THE AEROPLANE.—ED.]

"This has now been repaired, and Tommy is giving exhibitions at Garden City, Long Island, making passenger work a big feature. This has been very little done out here, and there is a big demand for it in this neighbourhood.

"From there we go to Narragansett (invented by the 'Belle of New York'), and by that time the big meets begin.

"One at Chicago opens on August 12th and lasts till August 20th. They have a prize list of \$80,000, and there ought to be a very good show there. Boston follows on that, and then St. Louis, Baltimore, and Kansas City, so things will be humming till September or October."

### A Sopwithian Feat.

Writing on July 12th, Mr. Sturrock continues:—Since writing you last Sopwith has been doing some really fine consistent flying. We have been at the Aero Club of America's new ground on Long Island, making a speciality of passenger-carrying, and in the short space of time that he has been flying there the place is already an American 'Brooklands,' and it has become quite popular for the New Yorkers to run down there in their cars and have flights.

The impression here is that Sopwith has done a tremendous lot to popularise aviation in this country. The flight over the *Olympic* was very interesting. He had to fly twenty-two miles and time himself to meet the *Olympic* as she passed the Statue of Liberty. The ex-Governor of New York and myself were on the police launch alongside the *Olympic* as she went out, and when we got to the Statue of Liberty there was no sign of Sopwith, and we thought he had lost his way. Then, just at the last minute he came in sight, at about 1,500 ft., circled the *Olympic* and dropped the parcel he was carrying.

It fell wide, however, and it was probably just as well, as the decks were so crowded that the parcel would probably



Left to right: Governor Woodruff, of New York City; Wakeman Wilcox, of the Moisant School;  
T. O. M. Sopwith; and J. Dudley Sturrock



have given somebody a bad headache if it had reached the boat, as he did not come down lower than 1,000 ft.

He told me that at that height he felt the hot air draughts from the funnels, and didn't think it safe to come any lower. However, it was a most spectacular flight.

The weather here is appallingly hot. It has been ranging from 90 to 105 in the shade for the last fortnight, which has been pretty trying for the faithful E.N.V. The old engine has behaved perfectly, flying without a hitch ever since we came over.

## The Question of "Benefits."

It was certainly a very sporting notion of Mr. Grahame-White's to give a benefit performance on Saturday last at Hendon for the second man in the "Circuit," and Védérines has done very well out of it, for there was a huge gate "at the Aerodrome—very much bigger, in fact, than on many occasions when there has been much more to see.

The weather was all against good exhibition flying, for though, or rather because, it was very fine and sunny, there was a strong and treacherous south-east wind which made flying more exciting than amusing.

The only fliers to appear were Grahame-White, de Conneau, and the beneficiary, Védérines, himself. Védérines flew his "Circuit" machine over from Brooklands at about 4.30 p.m., and evidently had rather a bad time coming, for, when sighted over the Edgware Road, he was getting a terrible pitching about from the gusts over the hill between Hendon and Kingsbury.

He made a really beautiful landing head to wind, after getting a final kick from a gust, when about 20 ft. from the ground, which would have probably brought a less experienced and skilful pilot over to a wing-tip.

### Védérines' Appearance.

When he got out of his machine and shed his overalls, considerable amusement was caused by his appearance in proper French ceremonial kit of dinner-jacket, white shirt, dress waistcoat, walking-stick, and gloves. Now the nerve strain of the big race is over, Védérines has once more become the jolly little *mécano* we used to know, and this little idea of his is quite in accordance with his fondness for a joke.

Afterwards he made a couple of flights, but, owing to the wind, very sensibly confined himself to plain circuits of the aerodrome at a moderate height.

Lieutenant de Conneau made one fairly long flight, going up to a considerable height over Hendon Hill, and outside the aerodrome. His flight was quite one of the most sporting acts I can remember. He had absolutely nothing to gain by it, he had just pocketed some thousands of pounds at least as the net proceeds of winning the third of a series of great international events, and he could very well afford to retire gracefully on his reputation and live comfortably on his winnings and his naval pay. Yet he turned out on a particularly nasty day to give a show in honour of a compatriot, and a representative of a bitterly rival firm at that. All honour to him. His performance was worthy of an officer and gentleman, and of the best traditions of French courtesy.

### Mr. Grahame-White's Flying.

After the two "Circuit" competitors had finished, Mr. Grahame-White brought out the "Baby" and proceeded to show the crowd some really wonderful trick flying. Certainly his performance was a marvelous exhibition of what a clever flier can do with a machine, but, all the same, I wish he would not fly just as he does on these occasions. He himself is far too good a man and has far too good a reputation as a flier for there to be any necessity for him to turn himself into an aerial mountebank as if he were the mere paid driver of a Yankee showman.

No one admires his flying more than I do, and no one has more implicit faith in his ability to get himself out of a tight place if anything goes wrong, but the best of control wires break and the best of propellers burst, and the best of wood and steel gives way at times, and if any of these things happen when a sixty-mile-an-hour machine is racing straight at a densely-packed crowd of people preparatory to a sudden swerve away from them, or tearing along in front of them at a distance of 20 ft., the result would be disastrous, not only to the physical victims but to the progress of aviation.

The winner of the King's Prize at Bisley does not demonstrate his skill by shooting at a target fixed in the dress circle of a London theatre. The winning horseman at

On one of our hottest days, however, Tommy and I flew over to a neighbouring golf links to play golf, and half way there the water boiled over and caught me in the back.

As we were over trees at the time we couldn't come down, so I had a warm time for a minute or two.

By-the-way, Tommy has been presented with a very handsome silver cup by the Aero Club for his flight over the *Olympic*.

We have just heard from Blériot's that the "70" has been repaired, and we shall have it again in about a fortnight, in time for Chicago.

Olympia does not demonstrate his mount's ability by jumping over the heads of the judges at the finish of the competition, though both could probably do so with immunity from accident. Why, then, is there any need for Mr. Grahame-White to prove his already acknowledged skill by turning his audience into a kind of combination of target and hurdle?

Might I suggest that a fine test of skill would be the fixing of a mast on each of four motor-cars and the placing of those cars with their masts 50 yds. apart in a line across the centre of the ground? Let Mr. Grahame-White then proceed to cut figures of eight between those masts, his line of flight crossing itself between the two centre masts and being limited at each end by the two outer masts. That would show his skill and the ease of handling his machine even better than shaving the crowd, and, if anything gave way, he would have room to save himself, and could not hurt anyone else.

As I have said, I have implicit faith in Mr. Grahame-White's skill, but, after twenty years' experience of the construction and materials of bicycles, motors, and aeroplanes, I have not got the same confidence in wood and steel, especially when they are built into a machine about whose stresses and strains we know so little as we do about those of an aeroplane.

On Monday of last week a cylinder-head blew off Mr. Cammell's engine in the open country. On the Wednesday a wire cast loose and split up Mr. Johnstone's propeller in the middle of Brooklands. Either of those things might equally well have happened on Mr. Grahame-White's machine on Saturday.

Knowing the high value set on human life by the authorities and by public opinion in this country, some of us, who do not, perhaps ourselves set so high a value on life, are anxious that, until aviation is more firmly established and more sympathetically regarded by the authorities and the public, no serious accidents shall happen. A serious accident would certainly have occurred had either of the breakages mentioned above happened at certain prolonged moments at Hendon on Saturday. And, be it remembered, such an accident occurring at a place and to a person so much in the public eye as Hendon and Mr. Grahame-White would cause much more outcry than it would if it happened to an unknown aviator at some provincial exhibition flight.

I only hope Mr. Grahame-White will accept these remarks in the friendly spirit in which they are written, for he has, in himself and the Hendon Aerodrome, very great possibilities, and can undoubtedly influence the progress of aviation in this country for good or evil to a very considerable extent.

### Védérines' Takings.

The receipts at the Hendon Aerodrome totalled £624 7s. 4d. £17 3s. 2d. was collected on the ground, and various donations brought the sum up to £801 7s. 8d. Védérines also received a solatium of £200 from Lord Northcliffe, and will have a share in the £250 put up by Sir George White for the man who gets through with the greatest number of marked parts. Mr. Elliman, the embrocation man, has presented £1,000 also, so he should pocket about £2,200 altogether, or something rather more than what he would have actually got if he had won.

The position, as Mr. Massac Buist points out in the *Morning Post*, is absurd. Here we have a paid jockey, backed by a big firm, which would have taken a goodly share of the money if he had won, having money poured upon him because he lost the race through being an inferior pilot to the winner, though he had, on his own showing, no motor trouble, and the winner had a good deal.

### Wanted—a British Benefit.

Who is going to hand out a couple of thousand pounds for Valentine and Cody, who have fought their way round at their own expense, unbacked by any firm, and with hardly any organisation of mechanics or spare cars? Will Brooklands, the "Hub of Aviation," give them a benefit?



# GREEN'S ALL-BRITISH AERO ENGINES

THE ENGINES FOR RECORD MAKING. COMBINE RELIABILITY,  
POWER AND ECONOMY WITH LIGHT WEIGHT.

Green Engines are water cooled and maintain highest efficiency when running continuously under full load. Made in two sizes, 30-35 h.p. and 50-60 h.p. Particulars and Prices upon application.

THE GREEN ENGINE COMPANY (SOLE LICENCEES UNDER THE GREEN'S  
MOTOR PATENTS SYNDICATE, LTD.)  
55, Berners Street, Oxford Street, London, W.

Makers for the Patentees—the Aster Engineering Co., Ltd.

## Nieuport Monoplanes.

**GORDON-BENNETT CUP, 1911.**

**1st. Weymann on a Nieuport. 3rd. Nieuport on a Nieuport.**

GENERAL AGENT FOR THE BRITISH EMPIRE:—

**MAURICE DUCROCQ, Brooklands Aerodrome, Weybridge, Surrey.**

## Blackburn Monoplanes

**TUITION.**

**EXHIBITION FLIGHTS ARRANGED.**

THE

**Blackburn Aeroplane Co., Balm Rd., Leeds.**

## MULLINER LONG ACRE, LONDON & NORTHAMPTON, LTD.,

*Aeroplane Works:* VARDENS ROAD, CLAPHAM JUNCTION, LONDON

Aeroplanes Built to Clients' own Designs. Best Material and Best Workmanship.  
Clients' Personal Supervision Invited.

**SOLE AGENTS for NORMALE PROPELLORS.**

The most efficient Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race; the European Circuit, and the

Telephone: 1987 Battersea.

"Daily Mail" Circuit.

Telegrams: "Aerocraft" London.

## The Week's Work.

## Monday, July 24th.

BROOKLANDS.—Percival out on the "Oozely Bird" experimenting to reduce the bowl of its radiators to a moderate cooling sound. Fisher doing straight flights on Martin-Handasyde, pending recovery of the Henrietta's engines.

HENDON.—Departure of "Circuit." Afterwards fine exhibition of high flying by Barber on Valkyrie, and very clever trick-work by Grahame-White on "Baby."

## Tuesday, July 25th.

BROOKLANDS.—Pashley out on antiquated Lane monoplane with Anzani engine. Unexpectedly got it up to 30 ft., and so overcome by emotion that he came down to tell his friends, but, in doing so, spread the machine into its component parts over Brooklands. No damage to Pashley. Johnstone on the Howard-Wright-E.N.V. going strong, and got up to over 1,000 ft. Record for this somewhat ancient machine. Fisher again out on Martinsyde (full name takes up too much space). In early morning Walton-Edwards' "Colossoplane" caused sensation by getting several feet off the ground. Front edge warping not yet given full trial, but interesting experiment. Percival also out on "Oozely Bird."

HENDON.—Barber had out one of the Type "B" Militaries with 50 h.p. engine, and made very pretty flight of twenty minutes, reaching 1,200 ft., making various evolutions. Mr. Newman, of Cambridge, had a passenger flight, and was delighted.

## Wednesday, July 26th.

BROOKLANDS.—Finish of "Circuit." Enthusiastic crowd of about 500 people at most to see it. Notice short, of course, but London might have done better. After finish Johnstone brought out Howard-Wright-E.N.V. Wire cast loose from right rear skid-strut. Caught propeller. Propeller dissolved, bits going through trailing edge of upper plane, and others tore tail elevator flap to flitters. Johnstone only 15 ft. up, and well out in middle of ground, so no harm done. Cause of wire going was the wearing out of nut underneath the skid, holding eyebolt to which wire was attached. Later Percival out, still performing tuneful melodies on "Oozely Bird," flying down by the tail, and gliding with angle of about 1 in 2, but machine has possibilities when tuned up (mechanically, not musically) a bit more. Captain Wood doing experimental straight flights on "Vickers No. 1"; later, Watkins out on same machine with passenger. Everyone much impressed by fine appearance and obvious stability of the machine. First all-steel machine of British manufacture.

HENDON.—Barber out again with same Valkyrie as day before, and gave Mr. G. Nicholson, of the War Office, an extended flight at a good altitude. Latter end of flight made during heavy thunderstorm, but machine behaved with remarkable steadiness. Heavy rain compelled a descent. It is to be hoped the War Office is now better educated. In evening "Valkyrie" school pilot out, and put up very interesting exhibition for a kinematograph firm. Later on Mr. Andrews given a passenger flight.

## Thursday, July 27th.

BROOKLANDS.—Fisher out on Martinsyde. Got into bad *remou* over corner of sewage farm. Machine started to drop. Fisher tried to twist her out to the left, but she would not lift in time, so touched a wing-tip and came down, breaking the chassis. Wings undamaged, except that the king posts were carried away. Billing took out the "Oozely Bird," the chassis of which suddenly and mysteriously collapsed, effectually wrecking the left planes, but not breaking the propeller, strange to say. Spencer trying a Gnome engine, which seems to pull his machine better than that which he had in it.

HENDON.—Mr. Scott Brown up on Valkyrie with kinematograph apparatus and made an extended flight over the surrounding district. Quite a tricky wind blowing, but no difficulty was found in handling the kinema apparatus, although it was the operator's first experience as a passenger. In afternoon Barber ascended with Miss Eleanor Trehawke Davies as a passenger, and, quickly getting up to 600 or 700 ft., made a fine cross-country flight in direction of Harrow, thence towards Ealing, over Hendon and the Welsh Harp, and back to aerodrome, by which time the machine was at an altitude of about 2,000 ft. Fine *vol plané* was made, and at finish great interest was taken in an account of the flight which Miss Davies had written while in the air. Writing perfectly clear, and a reproduction appears elsewhere. Several other passengers taken up, and a fine exhibition of figure flying given, in which numerous spiral *vols planés* and sharp right and left turns were made with great success.

Late in afternoon Dyott flew two circuits, and Captain Hamilton made some straight flights on the Blériot school machines.

EASTCHURCH.—Lieutenants Samson, Longmore, and Gerrard all making good flights on "Short" Naval biplanes, two first flying round the island, round Garrison Point, Sheerness, and over several vessels at anchor in harbour, to delight of holiday folk.

## Friday, July 28th.

BROOKLANDS.—Captain Wood made straight flights on "Vickers No. 1." Low then started for one, but found, to his surprise, that machine came to a standstill in spite of fully-opened throttle. Mystery explained. Left-hand wheel of each pair had come off, shearing the split pins which should have held them. Nothing happened except a refusal to get up flying speed. Apparently pins had been sheared owing to sudden swing to left while on ground. Good testimony to strength of axes and rest of chassis that no other damage was done. Mrs. Hewlett doing hops on the re-covered Farman all by herself.

HENDON.—Miss Davies, whose flight the preceding evening had filled her with enthusiasm, arrived at the aerodrome soon after 5 a.m., and went up as passenger of over a thousand feet, when fine cross-country flight was made over and past Harrow to the Thames, returning to the aerodrome with Ealing, Acton, and the White City on the right. Glorious morning.



Barber on the Valkyrie after the start of the "Circuit" on Monday.

and only those who have experienced cross-country flying in perfect weather can understand its exhilaration. Several other passengers were given flights, Barber flying altogether about two and a half hours. Valkyrie very strong on wing in evening, Mr. Cobb, weighing about 14 st., going up as passenger, with tanks holding oil and petrol for ninety-mile flight. Machine lifted easily, and, with extra weight, was steadier than ever, and also seemed to be somewhat faster. Mr. Cobb was delighted, and, like many others, he is now determined to take up cross-country flying. Several other passengers up, and Barber also made a fine solo flight in his usual excellent style.

**SALISBURY PLAIN.**—Busted up on No. 9 biplane to test weather conditions. Report sufficiently favourable to induce Jullerot to take Captain Hoare for first passenger flight, while Fleming took Captain Pitcher. Lawrence, who had just tuned up, went for his brevet, and put up a magnificent performance, doing the two parts of his test in less than twenty-five minutes, including resting time. Lawrence warmly congratulated by Captains Burke and Massy, the observers, for very rapid manner in which he had attained proficiency. Busted in to be made assistant instructor at Salisbury Plain, and he therefore did some passenger carrying later in evening.

**EASTCHURCH.**—Lieutenant Samson, up betimes, traversed the whole island at 1,500 feet before six o'clock. Later, Samson, Longmore, Gerrard, and Gregory all out on "Short" naval machines, putting in two hours' practice work.

6.45 p.m. In the Air  
Henderson.

I'm in a Valkyrie monoplane  
pilot W. Barber, 300 ft high  
at moment of writing - found  
higher - may be 500 ft high or  
my life - exhilaration intense on  
"push the earth" feeling 500 ft high  
starrow well in sight - visibility  
on left hand possibly shown more  
Sordor on right. Smoke has obscuring  
wind always light - not unpleasant  
on feet? She appears steady on  
to the grass high tops for a  
ark look 2000 ft higher for  
going down. reading 6/10 ft  
Spred over the miles on hour  
Thawer like a hawk Jarvis

Reproduction of Miss Davies' notes made in the Valkyrie on Thursday.

Saturday, July 29th.

**BROOKLANDS.**—Blondeau-Hewlett school at work in early morning. Now four pupils, Dr. Hansen and Messrs. Fabre, Hunt, and Booth. During week Mrs. Hewlett has been flying circuits in early morning, taking full control herself, M. Blondeau being passenger only, to give confidence to aviatrix, who should soon take her certificate. In afternoon Johnstone doing straight flights in strong wind.



The Valkyrie getting up over Reynolds' Howard-Wright.

**SALISBURY PLAIN.**—Morning, Bristol staff out, but found it very windy. Captain Stewart anxious to have a flight in the wind, so Jullerot took him for complete circuit, after which Fleming and Busted out on No. 26, but had to keep close to ground as there were some strange remous. Col. Smeaton always has bad luck, so when he arrived it was blowing full gale, and flying had been suspended for the day. However, it is likely that he will take his brevet very shortly. Lieut. Beales-Wright, Professor Petavel, and Mr. Pitman will start on straight flights as soon as weather allows, and quite a group of certificates are likely to be hauled in by Bristol pupils within the next week or so.

**HENDON.**—Valkyrie out again, Ridley-Prentice ascending as passenger for cross-country flight of ten or twelve miles. Ridley-Prentice weighs about 12 st., and, with fuel tanks full, no difficulty was found in rising to 2,000 ft. Mr. Newman, of Trinity College, Cambridge, also had extended flight. Barber was also flying for over an hour.

Dyott did first test for brevet on Blériot, before wind got too strong. Captain Hamilton improving rapidly, making straight flights, and Slack rolled, also on Blériots.

**EASTCHURCH.**—Lieutenants Samson and Gerrard out before six o'clock, flying continuously until just before eight, as appetiser before breakfast. Ogilvie, on "Baby" Wright, out about noon, flying well in puffly wind. In the evening four machines busy at same time. Frank McClean, just returned after six months' absence abroad, demonstrated that he had lost none of his skill, making several good flights in direction of Leydsdown and Eastchurch. All four naval officers putting in usual spell of practice work. Dunne made first circular flight on the Automatic monoplane. Starting from the top end of the ground he flew in the direction of Leydsdown, and, making a good left-hand turn, landed close to his starting-point, amidst the applause of all who witnessed his success. Good man, Dunne! Delighted to have opportunity of congratulating you! Towards 8 o'clock, whilst McClean, Samson, and Gregory were flying, thunderstorm suddenly burst upon island, and amidst thunder, lightning, and rain, and a wind which had jumped at once from dead calm to 30 m.p.h. (vide Dines), the three made a hasty but safe landing.

Sunday, July 30th.

**BROOKLANDS.**—Gale blowing all day till 6 p.m. Then wind dropped and magnificent flying to be seen. Chevalier out on Duroc's Nieuport two-seater. First trial flight up at 700 ft. over trees round track. Second time right outside over Weybridge and Chertsey at 1,200 to 1,500 ft. Cut off engine over



railway, came down to 50 ft. in front of Bristol sheds, and did a right angle turn round corner of main block of sheds, hardly dropping an inch in last 200 yards. Johnstone took the old Howard-Wright-E.N.V. up to 1,200 ft. out over the heath and golf links, finishing with a hair-raising *vol piqué* of 1,000 ft., with a list to port that he could not correct owing to pressure on aileron caused by speed of dive. Sigh of relief from the aviators on ground when he landed. Loud applause from other spectators. Wonderful how the old machine stood up to the strain. Afterwards took up a couple of passengers, including a deaf friend, who had the time of his life, not being worried by noise of engine. On conclusion found a wire of main cellule hanging loose within a few inches of the propeller. Some people have luck.

Watkins out on Vickers No. 1 doing circles in fine style on half-throttle. Also took up that good sportsman, Marion-Wilson, as passenger. Machine flies better with a passenger.

Pixton, recovering from wounds received on "Circuit," doing fine figures of eight on old military Bristol, several times with a junior England as passenger. Flying going on till dark, when Watkins' path could only be seen by the flames from the R.E.P.'s huge exhaust pipes. A great engine, that.

HENDON.—Miss Trehawke Davies showed renewed enthusiasm by arriving at the aerodrome at 5 a.m. for another flight just as Valkyrie machines were being brought out, but, owing to gusty wind, Barber remained inside the aerodrome making several circuits. Later Captain Loraine was taken for a short flight, and though anemometer registered 22 to 25 m.p.h., Ridley-Prentice was taken up to an altitude of 100 ft., and made two circuits. Ridley-Prentice recently took brevet on Farman and commented on remarkably slight movement of controls required to meet the strong gusts encountered on the trip. Wind high all day till 7 p.m., when Barber gave another demonstration of an hour and a half altogether. Extended flights were given to Miss Meeze, Livingston, and Ridley-Prentice, at various altitudes to 2,000 ft., flying over surrounding country in every direction.

EASTCHURCH.—McClellan made several good flights towards Eastchurch, and E. de B. Whittaker was seen out for the first time on his Farman, with Green engine, on which he made several straight flights. (Bomb-proofs now nearly ready.) Professor Huntington was also making straight flights.

#### Royalty at Eastchurch.

On Monday evening, the Royal Aero Club ground was visited once again by T.R.H. Prince and Princess Louise of Battenberg, Princess Henry of Prussia, and party, who witnessed some splendid flying during their two hours' stay. Mr. Frank McClellan and Lieutenants Samson, Longmore, and Gregory, R.N., and Gerrard, R.M.L.I., all on Short biplanes, and Mr. Alec Ogilvie, on the "Baby" Wright, were giving exhibition flights between 6 and 8 o'clock. Several of the ladies of the Royal party were taken for passenger flights by the naval officers. Princess Louise of Battenberg went up with Lieut. Samson, R.N., and Princess Henry of Prussia was taken as passenger by Lieut. Gregory, R.N. They both seemed thoroughly to enjoy the experience.

#### The First Michelin Flights.

Loridan, on a Farman racer, has the honour of putting up the first flight for the Michelin Cup under the new conditions

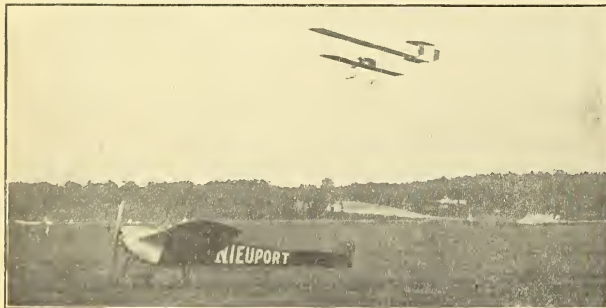


Chevalier's first appearance on the Nieuport at Brooklands

over a cross-country course of 100 kms. to the lap. He drove one of the small racing Farman's, the same on which he recently beat the height record. The new conditions allow landings, but only count complete laps of the course. He stopped about every 100 kms. for petrol, and covered 700 kms. (about 440 miles) in 11hr. 33m. This is record for a day's flying, but does not touch Oleslager's 625 kms. or Farman's 8hr. 12m., which were made without landing. The previous longest cross-country flight was De Conneau's 620 kms. from Paris to Avignon, in the Paris-Rome race.

#### Deperdussin Developments.

Aubrun, one of the finest fliers and most charming personalities among French aviators, has been manoeuvring at Cherbourg on his Deperdussin over a flotilla of submarines, and on July 27th made a flight of an hour round the harbour. His observations as to the visibility of submarines from an aeroplane while under water have been reported officially to the French Admiralty. By-the-way, the Deperdussin School at Brooklands will shortly be in full operation, and new Deperdussin schools are being opened at Brussels and at Etampes, the latter on the site of the old Teller School, so evidently the Deperdussin firm means business.



The Nieuport two-seater, with Pixton overhead, on Sunday evening.

**Another Blériot Success.**

The St. Petersburg-Moscow race was won by Wassilieff on a Blériot, none of the other machines finishing. One competitor, driving an engine-behind biplane, was killed early in the race. The prize, which was confined to Russian aviators, was £10,000.

**Tyck's Height Record.**

The many British friends of Tyck, the Belgian aviator, will be pleased to hear that on his Blériot he has raised the Belgian height record to 2,600 metres (roughly 8,500 feet). That beats the British record.

**New Pilots.**

Our latest pilots (dated as July 18th) are—104, Gerald Napier; 105, Lieutenant T. Gerard Hetherington; 106, C. L. Pashley; 107, H. de Grey Warter; and 108, Captain C. R. Brooke-Popham.

**The Theory of Propeller Pitch.**

FIRST LOCAL ENTHUSIAST (who knows all about it): Don't you think there is a little too much pitch on the propeller?

SECOND DRTTO (who knows still more): Oh, it isn't pitch, it's polish!

**An Opinion from Paris.**

Writing from Paris on July 28th, one of the Franco-British pioneers of aviation says: "I must congratulate you on having decided to produce a frankly outspoken aeroplane journal. After the daily papers' reports of 'arm-chair aeroplanes' and 'burst radiator jackets,' I have read your description of the start of the big race with considerable interest, and have been led to wonder why a daily paper cannot treat an aeroplane flight as intelligently as it would a yacht race or a prize fight. You are rather hard on Védérines and his *gros mots*, but no harder than are certain papers in France. In the 'European Circuit' race they get really tired of his *enguelades*. But this class of mechanic should not be taken too seriously, and the same importance should not be attached to his words as to those of an ordinary man. I am glad to see that you are forging ahead in England, and that, despite your naturally slow accelerating powers and official conservatism, you will soon get abreast of France. It seems to me a pity, however, that the English people did not live through that period when one was glad to wait from sunrise to sunset to see a machine lift three inches off the ground; it gave an enthusiasm that latter-day perfected flights cannot impart. Good luck and best wishes for THE AEROPLANE."

**Mr. Melly's Smash.**

On Tuesday of last week, while the crowd were awaiting the "Circuit" fliers at Manchester, Mr. Henry G. Melly came over from his school at Waterloo, and gave some exhibition flights. Unfortunately during one attempt to get up in a very bad wind the machine came down practically among the cars parked round the ground, fortunately without doing much serious damage, except to itself. Mr. Melly, in response to inquiries, writes that the fuselage was broken in thirteen places, the top and bottom members of the chassis were broken, five or six struts in various parts of the machine went, both wings were past repair, and the propeller also was smashed. The engine appears to have escaped, except for the twisting of the exhaust valve brackets, all of which fouled a broken engine strut while still running. Mr. Melly is to be congratulated on a wonderful escape.

**Bowden Controls.**

It is of interest to note that "Beaumont's" Blériot monoplane with which he won the "Circuit of Britain" was Bowdenised. This indicates yet another way in which the simple Bowden control has been successfully applied. For years the writer preached Bowden control for motor cycles, and was jeered at for his pains. Now it is universal on motor cycles and aeroplanes, the two fastest vehicles for getting about a country.

**The Visitors' List.**

As usual, THE AEROPLANE office has been visited lately by a number of active supporters of aviation.

Mr. Brown, of the U.S.A., called to say good-bye the morning after he had taken his certificate at the Blondeau-Hewlett School. He is now on his way to the States, where he intends to start making and flying aeroplanes in conjunction with Mr. Hilliard, another of the Blondeau pupils.

Mr. Harry Ferguson, of Belfast, reported the progress of his machine, which is now only waiting for its engine to be put in working order by the manufacturers before flying again. Mr. Ferguson was very active at Brooklands during the start of the "Circuit of Britain," and told THE AEROPLANE that the performances there have taught him quite a lot about queer atmospheric conditions.

Major J. N. C. Kennedy came in to discuss the management of "Circuit" controls, he, as usual, doing a large amount of volunteer work for the Aero Club.

Mr. P. Brocas-Parsons, fresh from his thousand-mile drive on the Bell car round the "Circuit" course, reported storm and bad weather throughout the North, and a 380-mile drive in the day to finish with, a fine performance for an untuned car.

Mr. W. J. Wilson, of Arthur Turner and Co., busy with work for the Bréguet machines, called to seek for information for the benefit of the Bréguet pilots.

Mr. Duigan, of Mia Mia, Australia, the only man south of the Equator who has built and flown an aeroplane, came in to present the latest photographs of his machine and to make inquiries as to aviation schools in this country, as it is his intention to take his pilot's certificate while over here on his holidays.

Mr. Graham Gilnour, still in a state of "suspense," discussed the education of the English daily Press, a subject with which he is certainly very competent to deal if the Press will only provide representatives for him to teach.

Mr. Hamel, just back from Carlisle, asked THE AEROPLANE to contradict flatly the statement that he ever fainted at Harrogate or anywhere else in the course of the "Circuit." He said that, as a matter of fact, barring very natural fatigue and considerable air-sickness between Melton Mowbray and Harrogate, he was never better in his life. All his trouble was caused by inlet valves sticking up in his engine.

Mr. Astley, who had finished his trip from Harrogate to Brooklands that morning, reported lubrication troubles owing to bad oil in his engine, but otherwise he seemed none the worse for his experiences. He told a joyous tale of his start from Irthlingborough for Harrogate on Tuesday morning, when, at 5.30 a.m., two ladies in "peignoirs" and goshes, held the tail of his machine what time a chauffeur in pink-striped pyjamas swung his propeller to start the engine.

Mr. Johnstone, who is now flying extremely well at Brooklands, called to discuss the prospects for pilots in the near future, as did Mr. Bell and other promising Brooklands pilots. All seemed agreed that "things are looking up."



Weymann's 100-h.p. Nieuport at the start of the "Circuit."



## The Blackburn Monoplane.

The Blackburn monoplane was first heard of at the Aero Exhibition at Olympia, in March last, where it attracted much attention owing to its simple and sensible design. It has since justified its supporters by various excellent performances in Yorkshire, where it has done so well, that two machines were entered for the *Daily Mail* "Circuit."

The type here illustrated (the two-seater) is a fairly large machine, spanning over 38 feet.

The wings are double-surfaced, and taper toward the tips; they are set at a dihedral angle.

The main spars are fixed to the single mast which forms the cabane, the rear spars being hinged to the sides of the body.

In some of the later machines there is a trussed compression-strut from the main spar to the top of the mast—a point which does not strike me very favourably; for, first, wires under the wing are lighter than any possible strut; and, secondly, no strut of this length, about 10 feet, is likely to stand under a strain great enough to break the under-wires.

A much better idea is that also employed, of putting a strong strut across the fuselage at the point of attachment of the rear spars.

A further improvement on most existing wings is the provision of a skid on the tips, so that a light touch of one wing on the ground does not necessarily mean a collapse.

The fuselage is wood-covered from the engine bonnet to the pilot's seat, behind which it is of the usual type, except that there is no wire, all the cross bracing being in wood. This part is, of course, fabric-covered.

### The Free "Enclosure" at Hendon.

Of course it isn't an enclosure at all really, except that it is bounded on the south by a tree, on the east by the aerodrome, westward by a paling, and northward by a barbed wire fence; but it is alive with far more enthusiasm than any real enclosure.

It is actually merely a heap of ballast which requires some elementary mountaineering to reach the summit, but the crowd is at least representative and possessed of a patience that would have given Job fits.

There is an assorted collection of cyclists, from the frankly juvenile upwards, and several small boys who fill the time of waiting with pursuits which do credit to their inventive genius, and a great deal of harm to their nether garments. Various fair ladies, some accompanied and some not, all furtively wondering if there will be anything to see after all, or if the afternoon will be a failure; also a few human odds and ends

The empennage is long and rather narrow, and has hinged to it an elevator flap of the usual type. There is a large vertical fin, and a pair of rather small rudders.

The passenger seat is, very sensibly, placed almost exactly at the centre of gravity of the machine.

The chassis is a very strong wheel and skid combination, its only disadvantage being a multiplicity of struts (twelve, to be exact). There is said to be "safety in numbers," but there is also—alas! much head-resistance.

The control is a three-movement one, rather different from any other in use. This difference may be itself against it, but can be forgiven if the control be greatly superior to any other. Personally, I think this a debatable point. The wheel is mounted on a horizontal shaft; it is raised or lowered for elevation, turned for warping, and swung right or left for steering. A second horizontal shaft, about 3 feet long, runs under the fuselage, one end having a cross bar connected by wires to the control-pillar, the other having a similar bar connected to the warp wires. At any rate, the workmanship is excellent, and far superior to the controls on average foreign machines.

The power plant of the machine illustrated is a 50 h.p. Gnome, housed in an ample cowl, and driving a 10 ft. 6 in. Blackburn propeller. The standard machine is fitted with a 50 h.p. Isaacson engine, which seems to work very well.

The drawings herewith are not taken, as usual, from the life, but are from working prints kindly sent by Mr. R. Blackburn, who will, I hope, accept my thanks P. K. T.

quite indescribable, but all possessed of the same exemplary good humour and patience.

Occasionally, a new member of this impromptu "Alpine club" brings word that there will be "no flying to-day, there is too much wind," but the news makes little impression. A few straggle off, the kind who prefer tea to aviation, but the majority stay on nobly till even the most optimistic has no excuse for further hope.

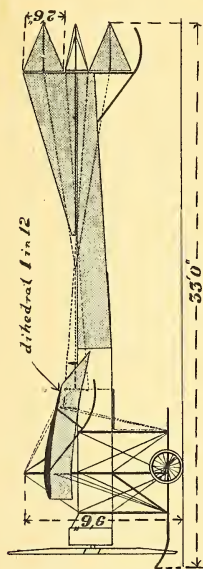
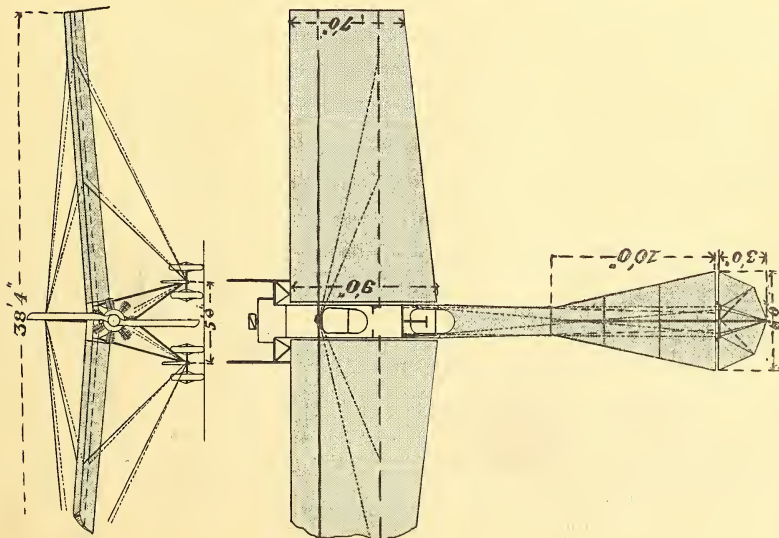
One might wonder what there is inspiring in a view of corrugated iron and hermetically sealed sheds? Perhaps, happy crowd, they are possessed of a more than usually fervent imagination, and the closed doors hold no secrets from their eyes.

They are always there, even if they do draw blanks more days than not, and if there are still those who say that the public takes no interest in aviation let them visit the free "enclosure"—they will learn otherwise then. D. M. H.



Three views of the Blackburn at Filey, and a view of the engine fixing with the housing removed.





## BLACKBURN MONOPLANE.

Surface of Main Planes	288 sq ft
" " Empennage	38 " "
" " Elevator	12 " "
" " Rudders	7½ " "
" " Fin	17 " "

Weight (without Pilot): 700 lbs. Speed alt. 55 m.p.h.

Engine: Gnome; 50 H.P.; 1000 rpm.

Propeller: Blackburn, 10' 0" diam. x 5' 9" pitch

*Blackburn*

**The Sheffield Model Aero Club.**

Above club will hold a model flying competition on August Bank Holiday (Monday), in the field adjoining Wadley Church, Marliffe Road, off Wadley Lane, Hillsborough (car terminus), flying to commence at 2.30 in the afternoon. There will be four competitions. No competitor will be allowed more than two models in each event. All entries to be made to the Secretary, C. F. W. Cudworth, 35, Penrhyn Road.

**Wireless.**

A correspondent of THE AEROPLANE who is a qualified wireless operator, and has some little experience with petrol motors, together with a fair knowledge of aeroplanes, would like to know of any firm or aviator who is experimenting with wireless on aeroplanes, as he would like to join in the experiments.

**A New Address.**

The "Clapham Aero Club" have removed to 23, Chatham Road, Wandsworth Common. Will any person wishing to join kindly communicate with H. Coomber, Hon. Secretary, for further particulars at the above address?

**Coming Events.****AEROPLANE COMPETITIONS.**

- Aug. 5.—Latest time for Finish of "Circuit of Britain."  
 " 5-21.—Circuit of Belgium.  
 Sept. —.—Paris-Bordeaux-Paris.  
 Oct. —.—French Military Competition (1,200,000 fr.).  
 " 31.—Last day for British Michelin Cup Flights.  
 Dec. 8-25.—Paris Aero Show.

**MODEL COMPETITIONS.**

- Aug. 12.—Kite and Model-Aeroplane Association Gamage Cup.  
 " 20.—Kite and Model-Aeroplane Association Self-Launching Models, North Ealing.

## *The Aeroplane,*

166, Piccadilly, W.

Telegraphic Address: AILERON, London.

Telephone: Mayfair 6407.

**SUBSCRIPTION RATES.**

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
3 months, post free	s.	d.	3 months, post free	s.	d.
6 "	"	3 3	6 "	"	5 6
12 "	"	6 6	12 "	"	11 0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsgagents, each issue can be obtained direct by forwarding remittance as above.

**ELSWICK & TOCARS LIMITED, FAG'S CORNER, BEDFORD.**—For sale as a going concern the above business, including complete Wood working machinery, Patents, Drawings, Plans, Patterns, Templates, also useful Plant for the manufacture of Aeroplanes, Motors, consisting of Tangye Gas Engine, Lathes, Drills, Planing Machines, Band Saw, Stocks and Dies, various Tools, Furniture, etc. (useful stock), and 6 Aeroplanes in course of construction. Works specially adapted for carrying on the business. Further particulars on application. Can be viewed at any time on application to Greenip, Snell & Co., Solicitors, 1 and 2, George Street, Mansion House, E.C.; Firth & Co., 77, Chancery Lane, E.C.; or the Liquidator, S. B. Saunders, King's Walk, Nottingham.

**IMMEDIATE DELIVERY.****400-500 YARDS.**

Complete set of parts for building

**No. 3 "Aerial" Twin Propeller Racing Model**

including all necessary Wood (planed), Main Aerofoil, Aluminium Elevator, Straining Wire Turrets, Rubber, etc. Finished Varnished Birch Propellers, Protecting Skid, full Instructions and Drawings.

**Post free 2/9**

We have been requested by numerous customers to design a more advanced Set of Parts and have pleasure in bringing to the notice of our Friends our

**AT-17 Set**

which, we feel certain, will meet a long-felt want for a model that will rise from the ground under its own power (not pushed), and after a long and steady flight will land lightly on its chassis. The set contains all necessary wood, finished propellers, material for aerofoils and chassis Complete drawings and instructions. Securely packed in strong wooden box. Length 3 ft. 2 in. Span 2 ft.

**Post free 4/9.**

Mr. F. PHOLE, Lancing, Sussex, writes:—"I cannot help writing to you and expressing how delighted I am with A.T. 17 sets received yesterday. I built the machine in forty minutes, and got some graceful flights. It is really very pretty to see the No. 3 Aerial and the A.T. 17 in the air together. I am trying to get a good photograph of them flying together, and will send you one. A great point in the A.T. 17 is the graceful manner in which it lifts from the ground, which is very pleasing."

Look out for our Steam and Petrol Model Engines, weighing from 2 ozs. complete with propeller.

*More Testimonials next week.*

## **THE AERIAL ENGINEERING WORKS, BALHAM, LONDON, S.W.**

Telephone: Battersea, 1900. Telegrams: "Supplying," London.  
 A B C Code, 5th Edition.

# T. WILLOWS. LTD.

## ERONAUTICAL ENGINEERS

### SPECIALITY: WILLOWS' DIRIGIBLES

- 32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



**S**ECOND-HAND BAND-SAW, splendid condition—Tilting Table, Fences, etc., for hand or power. £5.  
—MALLOWS & Co., Adelphi House, Strand, W.C.

**60-80** H.P. E.N.V. ENGINE. Absolutely new—What offers?—A.M., 58, Brocklehurst Street, New Cross, S.E.

**50** H.P. ALVASTON ENGINE, perfect condition, fresh from makers'. Replacing by more powerful type. £50 for quick sale.—MALLOWS & Co., Adelphi House, Strand, W.C.

**T**UITION.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. See news columns. One pupil won his certificate after two lessons.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**A**NZANI BLERIOT, second-hand, in good condition. LORD, The Grange, Barton-upon-Irwell.

**W**ANTED, Certificated Pilot Aviator as instructor Blériot and Farman. Salary and 50% all earnings. 3 months' certain engagement. State lowest terms and full particulars. SCHOOL, c/o AFROPLANE.

**F**OR SALE, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**V**OLUNTARY HELP.—Gentlemanly youth (19), late sec. to well-known Aero Club, is willing to give spare-time services to private aviator-experimenter or firm. Good knowledge of construction and woodwork, and is willing to learn. Must be within easy distance of London. Apply Box 327, AFROPLANE.

## THE Beney Propeller.

SIZES FOR STANDARD  
MACHINES KEPT IN STOCK.

Particulars and Prices from—

**ROBERT BENEY & CO.,**

7, CARLISLE STREET, W.

**L**ANARK AERODROME, Lanark, N.B.—Tuition by Certificated Aviator on genuine Blériot Monoplanes—Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

**P**ROPELLERS. — "Avro" Propellers of proved efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines. — A. V. ROE & Co., Brownsfield Mills, Manchester.

**M**ACHINES.—"Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market. — A. V. ROE & Co., Brownsfield Mills, Manchester.

**B**LERIOT cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

**CHAUVIÈRE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD and PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

## CLIFT AERO MAPS

Used in the "CIRCUIT OF BRITAIN"  
and all Cross-country flights.

Clift Maps were used by Vidart, Kimmerring, Valentine and others in the European Circuit, and by the majority of fliers in British Circuit.

## Clift Aero Compasses

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators.

Necessities for the

"CIRCUIT OF ANYWHERE"

For terms, write—

Eric Clift, c/o "The Aeroplane," 166, Piccadilly, W.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

THURSDAY, AUGUST 3rd, 1911

No. 9.

## LEARN TO FLY AT THE "BRISTOL" FLYING SCHOOLS

AT

### SALISBURY PLAIN

AND

### BROOKLANDS

The equipment is ideal, consisting of  
"BRISTOL" Biplanes fitted with  
Gnome Engines, and is so complete that

**THERE IS NO WAITING  
— FOR MACHINES —**

:: in the event of a smash. ::

Twenty-five  
per cent.  
of  
England's  
Certified  
Aviators  
are  
"BRISTOL"  
Pupils.

One  
"BRISTOL"  
pupil  
gained  
his  
Brevet  
after only  
three  
Flights.

The Tuition is in the hands of a number  
of the most skilled Aviators of the day  
so that

### RAPID PROGRESS

is fully ensured.

**SPECIAL TERMS TO NAVY & ARMY OFFICERS**

Full particulars from . . .

**The British & Colonial Aeroplane Co., Ltd.,**

Telegrams  
"Aviation" Bristol

**BRISTOL, Eng.**

Telephones :—2 P.O.  
74 National  
3074 "

"THE AEROPLANE," AUGUST 10, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

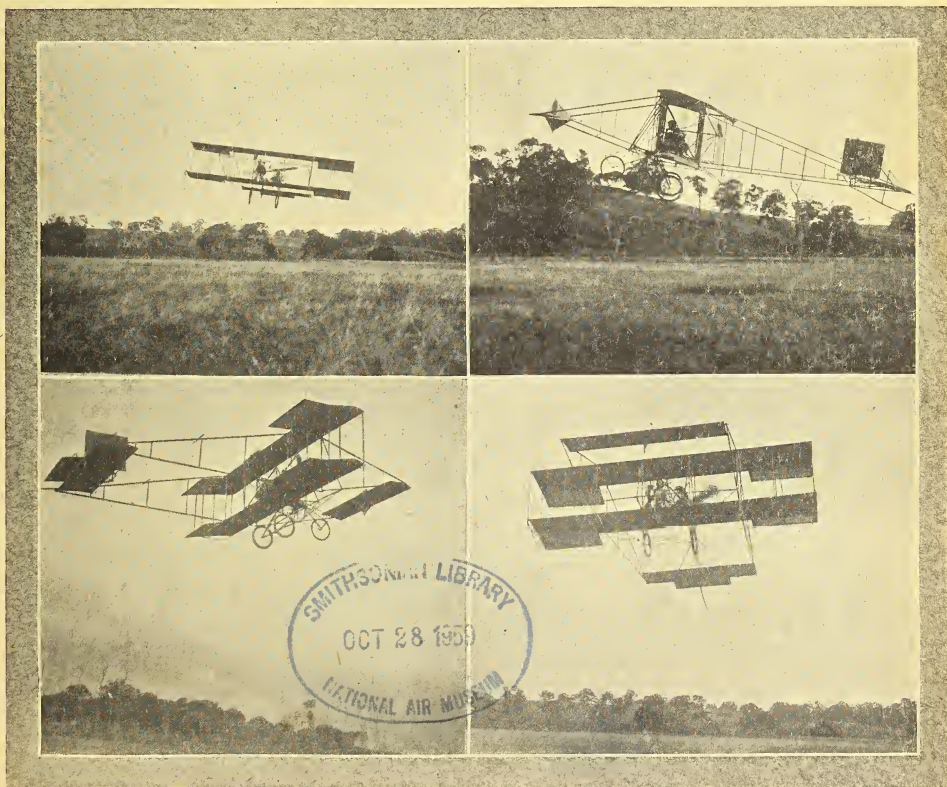
12  
WEEKLY

Vol. I.]

THURSDAY, AUGUST 10th. 1911.

No. 10

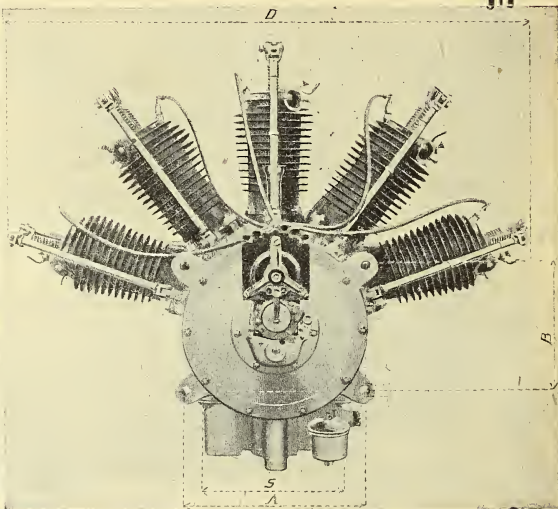
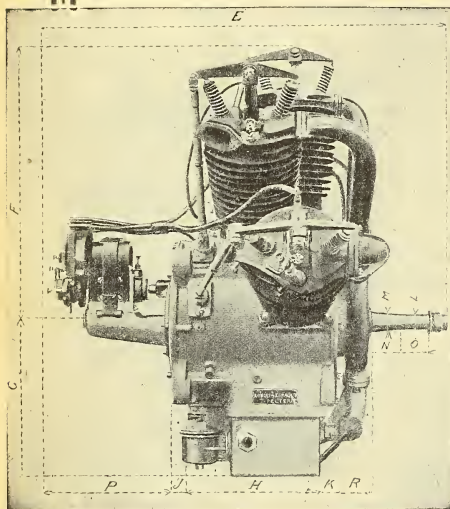
## Advance Australia!



Recent photographs of Mr. J. R. Duigan, of Mia-Mia, flying his home-made biplane. He is the only constructor-pilot south of the Equator.



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

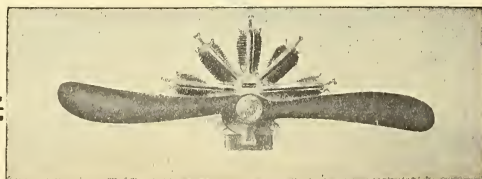
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL ... ..	219
AIR CURRENTS ... ..	224
THE BRITISH CIRCUIT OF BRITAIN ... ..	226
MORE QUESTIONS IN THE HOUSE ... ..	226
THE WEEK'S WORK ... ..	229

	PAGE
BANK HOLIDAY AT BROOKLANDS ... ..	231
AVIATION IN AUSTRALIA ... ..	231
"VICKERS I." ... ..	232
"PLAIN" TALES ... ..	234
CORRESPONDENCE ... ..	235

## Editorial Opinions.

## The Fixed Type?

Quite a number of papers have copied Lord Northcliffe's remark at the Savoy lunch, a remark which appeared in *The Daily Mail* the same morning, to the effect that the result of the "Circuit of Britain" has fixed the type of aeroplane for some years to come, and this has been generally interpreted to mean that the aeroplane of the next few years must be a monoplane.

If Lord Northcliffe had said that the result of the race had fixed a fashion for the next year or so one might have agreed with him absolutely, but the statement as it stands is rather too sweeping when one considers the possibilities of the biplane and of monoplanes of other types.

Of course, there are undoubtedly a large number of people with plenty of money and no technical education who will buy anything that will show up well in a big race, just as in the old motor days there was a boom in the cars which won the classic car events, though some of them were about as bad as cars could possibly be, and it has taken a matter of six or seven years for people to find out that British-built cars which could not win races were better cars for the ordinary man than badly-built foreign cars which did win races.

This, of course, is not to say that either the first or second machine in the "Circuit of Britain" were badly-built machines. They were certainly far from it, or they would never have stood the bucketting they got on the Northern portion of the course, but their performance does not prove that they are out and away better than other machines which did not finish, or than other machines that did not even start, and Lord Northcliffe's statement seems, therefore, to be based on the fact that he apparently believes the aeroplane of the future to be a racing machine pure and simple.

When one comes to designing aeroplanes for passenger-carrying work, or for flying enormous distances without landing, so necessitating the carrying of big loads of fuel, one soon comes to the limit of the monoplane. By the time one has got a monoplane with a span of 50 ft., or over, one begins to find that the strutting and wiring and bracing required will set up so much head resistance that one might as well make a machine with a smaller span and more lifting surface.

An excellent example of this was the Etrich machine in the "Circuit," which had certainly very nearly as much head resistance about its wing struts and spars and lattice girders as would have been set up by a decently designed biplane, and it

probably actually had more head resistance than a Bréguet, in which special attention has been paid to this point. When one comes to make a machine with a really big surface it is cheaper both constructionally and aerodynamically to make the thing into a proper girder-braced biplane.

Apart from very large machines, it is quite possible to make a biplane just as fast as a monoplane, though the writer must admit that, personally, for a small single-seater, or even a two-seater, he prefers a monoplane. If an attempt at prophecy may be permitted, the writer would venture to say that the fast small machines of the future will be monoplanes, and that the big, weight-carrying, long-distance machines will be biplanes, or possibly even multiplanes. At any rate, he is prepared to state quite definitely that the type of aeroplane is a very long way off being fixed.

## As to Aerodromes and the Public.

A writer in a contemporary has taken it upon himself to agree more or less with some outsider's statement that the death-knell of the aerodrome has already been sounded, and he devotes considerable space to setting forth the state of affairs which has led to his belief.

Apparently he has based his statements chiefly on his knowledge of one particular aerodrome, for many of his objections do not refer to others, and he has neglected, apparently, to notice that the chief blame for the disappointment of the public when they visit aerodromes rests, not on the aerodromes nor on the aviators, but on journalists who have never taken the trouble to teach their readers anything about the kind of weather in which they are likely to see flying.

Over and over again the writer has come across at the various aerodromes people grumbling because there is no flying on a nice fine summer's day, happily oblivious of the fact that they are sitting in the shelter of a shed, while outside on the ground there is a 30-mile-an-hour wind blowing, or, what is worse, a wind varying from 10 to 30 miles an hour in gusts.

At the start of the "Circuit of Britain" quite a number of journalists of the kind who are omniscient on everything except the things that matter, commented on the fact that the start was postponed for an hour owing to the wind. No doubt these critics from their seats in the bar did not feel the wind, and even if they had noticed the wind they were far too ignorant of their subject to understand the boiling state of the air.

Also, of course, if people go to an aerodrome where there are only four or five machines able to fly, and three or four of those are in dock, they cannot expect to see much in the way of flying. It never seems to strike a man who is going to an aerodrome that it would be worth his while, before he starts, to spend twopence on a telephone message to the aerodrome to find out whether there is likely to be any flying that afternoon.

#### Week-End Exhibitions.

It is all very well to talk about organising exhibitions of flying every Saturday afternoon, as the writer in the contemporary does, but he certainly ought to know enough about aviation to realise that, unless there is a very big prize to go for, an aviator who is running an experimental machine is not going to turn out and fly, just to amuse the public, if there be anything over a 20-mile-an-hour wind, and a steady wind at that.

For the last two months and more there has not been a single decent flying day in the London district, for when the wind has been below 20 miles an hour the heat of the sun has been so great that the heat *remous* have been more dangerous than a steady 40-mile-an-hour wind. The great thing for journalists, both of the lay Press and of the more or less technical Press, to do is to impress on the public

that at present they must not expect aviators to fly at certain stated hours, but that the members of the public must educate themselves to understand weather conditions.

Before we became a miserable herd of city dwellers, living in boxes and burrowing under the earth for methods of transit, our forefathers, who lived in the country, paid as much attention to the weather as do the aviators of to-day, and one can still find labourers on farms who can tell with wonderful accuracy whether it is going to blow, or rain, or be calm, for something like twelve hours ahead. Those of us who really know our aerodromes are beginning dimly to acquire this same sense.

If people care to go to Brooklands on any fine day they will always find plenty of machines to look at, and plenty of agreeable young men in the various sheds willing to explain them. If they would have the sense to stop till that blessed hour before dark, when even the worst winds almost always calm down, they are sure to see some good flying.

They need not worry about hurrying home to dinner, because they can always get food and drink at the "Blue Bird," which is quite good enough for anyone except those journalists who expect all catering outside their own houses to be like the free feed at the opening of a motor showroom.

### Hard Luck!



De Montalent on the Bréguet (engine troubles all the way to Harrogate); Astley on the Birdling (engine troubles); Kemp on the Avro (smashed up on morning of start); and Blanchet of the Bréguet (smashed up at Melton Mowbray).

**E. N. V.****ALL-BRITISH AVIATION MOTORS****Made in Three Sizes, viz. :****35 h.p.****\*60 h.p.****100 h.p.**

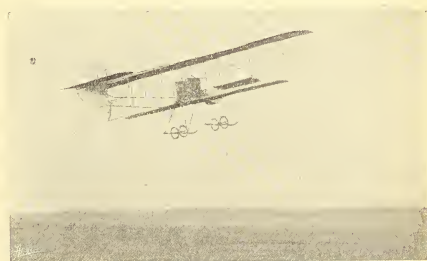
\* Winner of Baron De Forest Prize of £4,000---1910.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESDEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

**HOWARD T. WRIGHT****110, HIGH STREET,  
MANCHESTER SQUARE, W.**Telephone  
8574 GERRARD.*Eight Types***Monoplanes****From 40 to 80 miles per hour****Biplanes****From 36 to 50 miles per hour.**

Catalogue on Application.

**Winner of De Forest Prize.**



# The Universal Aviation Co., Ltd.,

166 PICCADILLY, W.

Supply Aeroplanes and all Accessories for them

## MONOPLANES OR BIPLANES.

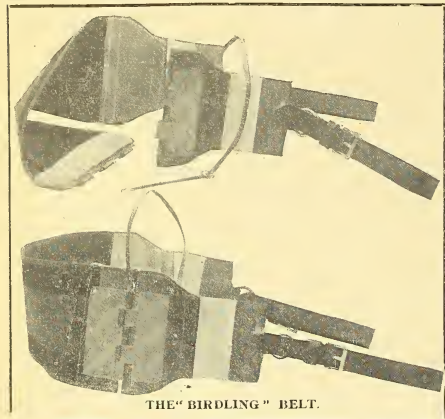
Engines and Propellers.

Timber, Steel Tube and Fabric.

Aluminium in Sheet or Castings.

Petrol and Oil Tanks and all  
other engine fittings.

Landing Wheels and Skids.



THE "BIRDLING" BELT.

## Aviators' Safety Belts & Helmets

THE BEST AND LATEST  
MAPS & INSTRUMENTS  
FOR CROSS-COUNTRY  
WORK.

Bolts, Nuts, Wires,  
Strainers, Eyebolts,  
etc. Tools of all kinds  
by the best makers.

Telephone : 3407 Mayfair

Telegrams : "Birdling," London.

WHAT MR. GUSTAV HAMEL THINKS OF IT.

ARRISON  
LONDON

THE ROYAL AERO CLUB  
OF THE  
UNITED KINGDOM.  
166, PICCADILLY,  
LONDON W.

1642 MAYFAIR

To the Universal Aviation Co. Ltd.,  
166 Piccadilly  
July 31<sup>st</sup> 1911

Dear Sirs

You will no doubt be glad  
to hear that your safety belt  
which I used on the Daily Mail  
Tribune, was of the greatest service  
to me; and I shall certainly  
never attempt a big cross-country  
without it  
Yrs Truly. G. W. Hamel

The price of admission every day, except when there is motor racing on, is 1s. If there be better value to be had anywhere the present writer has certainly never discovered it.

The writer in the contemporary referred to also appears to take exception to the statement of the manager of a certain flying ground that it would be impossible to have regular week-end exhibitions owing to the difficulty of getting all the machines tuned to concert pitch for the occasion, and expresses the opinion that the tuning capabilities of the mechanics must be poor indeed.

Apart from the fact that "tuning" is not the only bar to week-end exhibitions, it seems possible that the writer in question has not assisted at the tuning-up of an aeroplane, or does not realise that most of the machines at the various aerodromes are still more or less experiments, excepting those which are the property of amateurs or trick flyers.

For the benefit of readers of *THE AEROPLANE*, it may be as well to point out that the tuning-up of a new type of machine may occupy many months, and that when at last it is thoroughly tuned some accident, due more to the engine than to the aeroplane, may smash the whole thing up before the necessary

data have been collected, and so re-tuning may take more months.

If all machines were of the same type, and so were easily tuned themselves, it might be easy enough to tune up all the engines for a given date, but the result of the "Circuit of Britain" ought to be enough to show any intelligent person the utter impossibility, at present, of tuning up a number of different types of aeroplanes and their engines all at the same time.

There are at Brooklands at present thirty-nine sheds, and these hold something like fifty machines. If ten of those machines happen to be in flying order at the same time it is an extraordinary piece of good luck; but, on the other hand, if only five of them are in first-class order, the visitor who has the sense to stop till the proper flying hours is assured of a very much better show than was seen by any of the millions of people who waited patiently round the course of the "Circuit of Britain" to see a couple of monoplanes pass thousands of feet overhead.

The writer already referred to appears to forget for the moment that aeroplaning at present is a science in an experimental stage, and not merely the basis of a "gate-money" performance for the amusement of that portion of Society which is only seen where money will take it.

## The Farman Machines in the European Circuit.

*THE AEROPLANE* has received the following letter from Messrs. Farman Frères, of Paris:—

22, Avenue de la Grande Armée.

August 2nd, 1911.

To the Editor of *THE AEROPLANE*, London.

Dear Sir,—Our attention has been called to certain statements contained in the issues of your journal of July 6th and 13th.

In the former you state in your reference to the recent European Circuit that one of our pilots, M. Bille, "on reaching a height of some 2,000 ft., was starting to descend and one of the ailerons broke away." This is by no means the fact. No aileron of our machine broke away, and M. Bille himself informs us that his sudden descent was due to his having cut off the engine for landing when he was caught in a *vol plané* by a violent gust of wind behind, which thoroughly mastered him; but, before reaching the ground, he was able to recover his equilibrium, and then, wishing to restart the engine for finishing his landing, the motor not having refired, he was obliged to alight in some very high corn, injuring the landing chassis. You will thus see that the sudden landing was owing entirely to the engine missing fire just as the machine was taking the ground.

The other statement in your issue of July 13th, to which we take very strong exception, is that the Henry Farman biplane in the European Circuit showed up very badly, smashing up time after time. This is totally incorrect, as we had no spare machines, and it was entirely through motor troubles

that the Henry Farman biplanes were obliged to abandon the race.

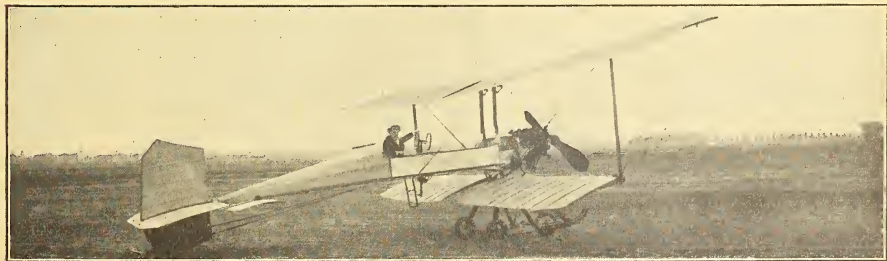
As regards our Maurice Farman biplanes, they went through the whole circuit without changing any part of the aeroplane, the one piloted by Renaux carrying also a passenger; and had it not been for the unfortunate failure of the motors in our other machines they would doubtless have shown a similar record.

We feel that you will be only too willing to give full publicity to this statement of the true facts.

We are, yours faithfully,

(Signed) FARMAN FRÈRES.

[The Editor regrets the statements complained of, which were made on the only news available at the time, and, since obtaining further information, he finds that the statement as to the aileron was wrong, and the other references were not, in fact, accurate. He has much pleasure in fully accepting Messrs. Farman Frères' letter, and offers them his apologies. The Editor has now seen a letter from M. Bille, in which he explains that the uneven descent of his aeroplane arose entirely from engine trouble. As regards the other stoppages during the circuit, the Editor never imagined that these were caused by other than engine troubles, such as occurred to practically every competitor. It gives the Editor the more pleasure to make these corrections, as he has distinct recollections of a very entertaining day spent with the director of the Farman school at Etampes.]



Blanchet at Douai on the Military Breguet, bought by the British War Office. Note the empennage and the double control wheel.

## AIR CURRENTS.

## AERODROME TYPES.

## No. 2—The Butterfly.

She comes with others of her own and the opposite sex in what she describes as a "perfectly deevy car," and her conversation is punctuated with little ohs and ahs, or occasionally, a squeal of delight, and most of her words are underlined.

"Oh, do look at that perfectly dear man with brown eyes; do you think he is going to fly? I would just love to be his passenger. You know, Ted, you *promised* to treat me to a passenger flight *this time*."

Ted murmurs something unintelligible about doing his best, and strolls off in the direction of the sheds. He returns in a little while to be hailed with: "Oh, Ted, *do* come here, I really *must* go up in this machine; it's too absolutely twee for words, and the seat looks just *made* to fit me."

"But I thought you wanted to fly with Blank?" (mentioning the brown-eyed aviator).

"Don't be silly, his machine isn't a bit pretty, and it's simply covered with oil, and I should look an awful sight afterwards. *Do* be a dear boy and book me for this one." And the "dear boy" is left to sort out the muddle as best he can while she flits onward.

She peeps into sheds, exclaiming delightedly on being invited inside, holding dainty skirts aloof from oily boards and greasy planes.

Her smile renders aviators and mechanics alike her abject slaves, and her most inane remarks are treated with becoming gravity and seriousness.

Perhaps she has an aviator brother or friend, whom she seeks out on her arrival and takes possession of for the remainder of her stay, while he, nothing loath, trots in and out and round about at her slightest desire, and talks frivolity over cakes and tea at the close of the afternoon as willing as any.

She explains wistfully that she would love to fly all by herself, and asks do they think she would ever learn, to be answered by a chorus of yeses and fervent assurances of her being able to do so in one lesson.

In attempting to describe her passenger flights words fail her, and she can only repeat, helplessly, that she wishes it could keep on for ever and ever and ever without stopping.

Motoring almost loses its charm by comparison, and she resents every temporary stoppage on the homeward journey most bitterly.

She does not mind the usual questions as to her being afraid, for she considers them to be entirely beneath her contempt. She is apparently unable to realise that there is any danger, although a restive horse may reduce her to exhibiting every sign of terror.

With all her light heartedness she is genuinely interested in her way, and by her enthusiasm, uninstructed as it may be, she helps to arouse first pitying wonder and then enthusiasm in those with whom she comes in contact.

Of the many aerodrome frequenters she is a very welcome one. The grounds would look strangely bare on meeting days and every day without the flutter of her pretty frocks and the brightness of her audacious hats. The twinkle of her bright eyes and her shoe buckles lends gaiety to all and sundry, and her smile wins her a straight road to every heart.

We certainly cannot afford to lose our butterflies.

D. M. H.

The only Clift is very particular about the surroundings of his compasses, and when once they are adjusted nothing in the way of iron or steel must be added to or subtracted from the machine in their proximity. Quite right, too, if real accuracy is required. There is, however, no truth in the rumour that he has disclaimed all responsibility for the correct behaviour of a compass if the pilot takes an iron tonic before starting.

At a certain restaurant "Quails in aspic" is a favourite dish. A well-known constructor who was served with a "portion," finding he had got a maximum of jelly to a minimum of quail, inquired plaintively, "Is the aspic really always as high as this?"

Conversation overheard whilst waiting for the flyers at one of the controls on the "Circuit":—

First Man: "I hear as Astley had to come down 'cos he was sick in the air. 'Ad eggs and bacon for breakfast."

Second Man: "More fool 'im. Never ought to a' eaten that when he know'd he was going to fly."

First Man: "What do you reckon these flying chaps ought to eat, then?"

Second Man: "Why, birdseed, of course."

An accomplice to a rival at Brooklands, hearing the howling radiators of the "Oozely Bird," remarked viciously, "There seems to be more cooing than billing about that 'bus."



MORE SMILING AVIATORS:—Left to right: Eardley Billing; Eric Clift talking compasses to Howard Wright; Hukins of the E.N.V. in the white car; Watkins about to push Fisher off the car; Bell; Herbert - Spottiswoode, who always has a car for the transport of aviators; DelaCombe, at the back, and "Mr. Smith." The semi-eclipsed person is part of "The Aeroplane."



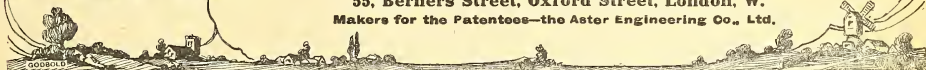
# GREEN'S ALL-BRITISH AERO ENGINES

THE ENGINES FOR RECORD MAKING. COMBINE RELIABILITY,  
POWER AND ECONOMY WITH LIGHT WEIGHT.

Green Engines are water cooled and maintain highest efficiency when running continuously under full load. Made in two sizes, 30-35 h.p. and 50-60 h.p. Particulars and Prices upon application.

THE GREEN ENGINE COMPANY (SOLE LICENCEES UNDER THE GREEN'S  
MOTOR PATENT'S SYNDICATE, LTD.)  
55, Berners Street, Oxford Street, London, W.

Makers for the Patentees—the Aster Engineering Co., Ltd.



## Nieuport Monoplanes.

GORDON-BENNETT CUP, 1911.

1st. Weymann on a Nieuport. 3rd. Nieuport on a Nieuport.

GENERAL AGENT FOR THE BRITISH EMPIRE:—

MAURICE DUCROcq, Brooklands Aerodrome, Weybridge, Surrey.

## Blackburn Monoplanes

TUITION.

EXHIBITION FLIGHTS ARRANGED.

THE

Blackburn Aeroplane Co., Balm Rd., Leeds.

## MULLINER LONG ACRE, LONDON & NORTHAMPTON, LTD.,

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON

Aeroplanes Built to Clients' own Designs. Best Material and Best Workmanship.

Clients' Personal Supervision Invited.

SOLE AGENTS for **NORMALE PROPELLORS.**

The most efficient Propellor in the World.

Used by M. Beaumont, in winning the Paris-Rome Race; the European Circuit, and the

Telephone: 1987 Battersea.

"Daily Mail" Circuit.

Telegrams: "Aeroeraft" London.

## The British Circuit of Britain.

On the Tuesday of last week Cody left Carlisle and came down near Worthing, where he stayed the night. Valentine, leaving Gloucester in the morning, got to Bristol, where he stayed the rest of the day.

On Wednesday Cody reached Manchester, filled up there, and came down in Worcestershire, reaching Bristol later in the day. The control there was officially closed the same evening, so Cody made an "official" start, and stayed where he was. Valentine, leaving Bristol in the morning, got to Exeter and stayed there.

On Thursday morning Cody left Bristol and flew as far as Weston-super-Mare, where he stayed the night. Valentine left Exeter at 7.30 a.m. and reached Salisbury Plain, where he stopped most of the day, leaving in the evening for Brighton, which he reached safely, covering the seventy-six miles in practically seventy-five minutes.

On Friday Valentine left Brighton in the morning and came down about half-way to Brooklands, at Warrnam, finally arriving at the finish in the afternoon. Cody, leaving Weston in the morning, flew to Exeter, and thence to Salisbury Plain, stopping the night there.

On Saturday Cody left Salisbury Plain in the early morning, got to Brighton, and, after a very short stop, went on to Brooklands, where he arrived so early that no one expected him, and there were only half-a-dozen people to meet him.

### An Appreciation of Cody.

It may be stated without fear of contradiction that Cody's is the finest performance in the race, and one can say this without any disparagement of Valentine's very plucky show. Cody built his machine himself, without any financial assistance, and against odds which would have beaten any ordinary man years ago. In the face of public ridicule, official opposition, and various other hindrances, Cody has won through and made good.

It has been said that Cody talks too much. He does not. In the two years and more that the writer has known Cody, everything Cody said he could do he has done. Talking and advertising himself was his only chance of getting himself known, and getting engagements for exhibition flights which would provide the money for his experiments and running expenses. Cody remarked recently that when he had made enough money to go on with his work quietly he would live the life of an oyster. Cody talks because he has to, not

because he wants to, and he talks sound horse sense all the time. He is proud of his machine, of his performances, and himself, and no one has a better right to pride. His machine is his own design, and owes nothing to anybody except himself. His performances have been extraordinarily good, because he taught himself to fly on his own machine on the worst ground in England, where he has beaten world's records for cross-country flying before any of the present "star turns" ever sat in an aeroplane. And he himself is a self-made man, without friends or money to back him, yet he is as true a gentleman as ever lived—honest, straightforward, kind hearted, a thorough sportsman, a magnificent flier, full of pluck, and as straight as they make them. Though born in America his father was a North of Ireland man, and Ireland may well be proud of him—Ireland can afford to let England have some of the reflected glory of his adopted citizenship. If ever a man deserved a public benefit it is Stanley Franklin Cody.

In the triumph of Cody's pluck, perseverance, and ability as a designer and constructor, the British-built and designed Green engine must share, for it is the only thing about the machine which is not all-Cody. The engine came through with all its "marked parts," as did the machine itself. It behaved splendidly throughout, and, be it remembered, propelled the biggest and heaviest machine in the race. Mr. Fred May and Mr. Green have every reason to be proud of the fine proof their engine has given of its reliability and power when properly handled by a man who understands it and treats it as it should be treated.

### The Excellent Valentine.

Valentine's performance is a very fine one, and but for his delay at Edinburgh on Tuesday morning he would have been close up with the leaders all through. It was just luck that beat him, for his Deperdussin is as fast as the Blériot and Morane. By staying two or three hours of his "rest time" at Edinburgh instead of starting with the other two, he just ran into the worst weather which they forestalled by getting away in front of it. Yet, despite his small experience of monoplane flying and cross-country flying, Valentine stuck at it and "worried through" in typical British style.

He is young, full of pluck and energy, and of fine athletic build; also, he has beautiful "hands" on a machine, perfect judgment of speed and distance, and unlimited nerve, so, with any luck, he has a fine future as a flier. Good luck to him in his next attempt at a big flight.

## More Questions in the House.

### Aeroplanes for Military Purposes.

Sir John Lonsdale (U., Mid-Armagh) asked the Under-Secretary of State for War if recent demonstrations of the utility of aeroplanes for military purposes had attracted the attention of the War Office; and if any decision had been arrived at to add to the number of machines owned by the military authorities and the staff of trained military aviators.

Colonel Seely said the answer to the first part of the question was in the affirmative. As regarded the last part of the question he had nothing to add to the answers already given.

Sir John Lonsdale: "How many are there in use?"  
Colonel Seely: "If the hon. member will put down a question I will do my best to give him an accurate answer. The number varies from day to day."

Mr. Arthur Lee (U., Hants, Fareham): "Will he answer the last part of the question?"

Colonel Seely: "To the particular question whether it is necessary to add to the number now in our possession the answer is certainly yes, but I can make no general statement as to how many or when, because that is still under consideration."

Mr. J. Ward (L., Stoke-on-Trent): "Will the right hon. gentleman give a pledge that this matter will be discussed by the House before any great expense is launched?" (Labour cheers.)

Colonel Seely: "On a matter of business, of course, it is not for me to say when an opportunity will arise. No great expense is likely to be incurred in the near future in the purchase of aeroplanes, though some will have to be bought."

Mr. Ward has unintentionally raised an important point. "No great expense is likely to be incurred." What does that mean? Expense, of course, is relative, and £100,000 is not "great" expense for a nation, but will someone please ask

Colonel Seely whether the expenditure is to be £1,000, £10,000, or £100,000? As a matter of fact, £1,000,000 (about one-half the price of a *Dreadnought*) would be "no great expense" under the circumstances.

### The Navy and Aviation.

Sir John Lonsdale (U., Mid-Armagh) asked the First Lord of the Admiralty if he was aware of the results of experiments conducted in France with regard to the detection of submarines by observers in aeroplanes and communication between aeroplanes and battleships by wireless telegraphy; and if he would state what progress is being made by the Admiralty in training officers as aviators for scouting and offensive purposes.

Mr. McKenna: "We have no information at present beyond what has appeared in the Press on this subject. As regards the second part of the question, four officers are just completing a six months' course of instruction in aviation at Eastchurch, and the question of commencing a new course is now under consideration. The training so far given has been of a general nature only."

Mr. Lee (U., Hants, Fareham): "Will the right hon. gentleman consider making a large increase in the number of these officers trained as aviators, following the good example of the War Office?"

Mr. McKenna: "We have not the same requirements as the War Office, but we are considering the question of the requirements of the Service."

Again, an important point has been raised. What are the requirements of the Admiralty? Surely the Navy needs, if anything, more air-scouts than does the Army. Every ship above the size of an unarmoured cruiser should carry three or more aeroplanes, and there should be special 30-knot scouts carrying a dozen 70 miles-an-hour aeroplanes each, specially for operations in advance of the Fleet.



**More Hard Luck!**

The Bristol Team who had such bad luck in the "Circuit." 1. Gordon England (engine refused to pull). 2. Oscar Morison (injured eye the night before). 3. Grahame Gilmour (suspended by Royal Aero Club on eve of race). 4. Howard Pixton (smashed owing to engine stoppage). 5. Collens Pizey (stopped by engine trouble). 6. Pierre Prier (smashed monoplane on morning of race). 7. Maurice Tabuteau (stayed in France for a race which was postponed).



### Is Flying a Nuisance?

The cry of the Weybridge inhabitant is strong in the land of newspapers, and I fear he is rather well justified in crying somewhat.

Of course, it seems reactionary and unreasonable; but it must be remembered that while the buzz, rattle, or bark of a nicely running engine is a joyous whisper to an aviator, it is a horrid noise to others. Similarly, the incense-like odour of petrol and burnt castor oil seems, from their respective points of view, to resemble in one case the scent used by his true love and in the other just a nasty smell.

To one who cares little or nothing for aviation—and, miraculous to relate, there are such—the noise of a plane passing close overhead at 4-30 a.m. may be rather annoying; and if such a person look out of his chamber window, and perceive the machine apparently making a bee-line for his right eye, he may also suffer from shock to the system.

But, apart from joking (as the commercial traveller said on regaining the business man's office after his samples had been thrown out of the window and himself down the stairs), the people of Weybridge are seriously complaining that "the boys" are showing a lack of consideration, and I think they are justified. I am certain that none of the flyers there would wilfully annoy anyone; but I don't think they realise quite how disturbing they are.

There are two remedies; the first is that anyone who has an engine which, from its design, cannot be silenced, should, when overtaken by the nostalgia of maturational flying, keep a fair distance from populous country—a thing easily managed; and that anyone flying over Byfleet, Chertsey, or Weybridge should keep at least 800 ft. high. The second and less pleasant is that the R.Ae.C. should step in and make it an offence to annoy reasonable non-aviators. Everyone who has the interests of flying at heart will see the reason of this, for, among other things, if steps are not taken, we may have some irate inhabitant trying to get a flyer indicted as a nuisance, and, alas! with a very fair chance of success. P. K. T.

### Deperdussin Developments.

Aubrun, one of the finest flyers and most charming personalities among French aviators, has been manœuvring at Cherbourg on his Deperdussin over a flotilla of submarines, and on July 27th made a flight of an hour round the harbour. His observations as to the visibility of submarines from an aeroplane while under water have been reported officially to the French Admiralty. By the way, the Deperdussin School at Brooklands will shortly be in full operation, and new Deperdussin schools are being opened at Brussels and at Etampes, the latter on the site of the old Tellier School, so evidently the Deperdussin firm means business.

### A New Height Record.

The Blériot has not been long getting back the height record, which seems to be its speciality. On Saturday, the 5th, Captain Felix, of the Military School at Etampes, put the record up to 11,000 ft. (3,350 metres), beating Lorian's record of 3,180 metres.

### Concerning the Blackburn.

*Apophos* of the Blackburn monoplane, it is worthy of note that it flies quite well with a 50 h.p. Gnome engine, though several machines of very similar type have been unsuccessful with this engine. The machine, therefore, must be very efficient, and fly with comparatively low power for its size. The first day the Blackburn was tried with a Gnome it flew from Filey to Scarborough and back, a distance of seventeen miles, in fifteen minutes. The whole of the Blackburn, except the motor, is made in Leeds, and is produced by the Blackburn firm itself. The Gnome mounting is specially made, and is pressed out of sheet steel.

### A Remarkable Model Flight.

THE AEROPLANE is informed that on Saturday, June 20th, in the competition organised by the S.E. branch of the Aero Models Association, the "Mann" monoplane No. 49 made an absolutely straight flight of 2,535 ft., or very nearly half a mile, which is, presumably, world's record. The distance was measured by Mr. Jannaway, and the flight was officially observed by Messrs. Horth, Bragg-Smith, and others. This machine won first prize. Mr. R. F. Mann also holds the world's record (82s.) for duration, and his models have been awarded ten first prizes in public contests. Owing to repeated requests from the general public, it has been decided to place the "Mann" monoplane on the market at a low price, the manufacturers for Great Britain being the well-known firm

of Willis Bros., 60, Cambridge Road, Hastings, and the Continental agent M. F. Gache, 26, Avenue Gambetta, Angoulême, France, from either of whom full particulars can be obtained. Each "Mann" monoplane sent out is guaranteed personally tested by Mr. R. F. Mann, and to have made minimum flights of a quarter of a mile in 60s.

The above distance does not tally with the prize-winning distance given in the official report, so presumably this flight was made after the competition was over.

### The Aero Models Association—South-Eastern Branch.

It is officially intimated that the monthly model flying competitions held by the S.E. branch of the Aero Models Association took place on Saturday, July 29th, of the golf links, Mitcham Common, with a very fair attendance. The results were: Duration.—1st, R. F. Mann, 59s. Distance.—1st, C. B. Ridley, 50s yds. Those wishing to join the association are requested to communicate with Mr. Alfred B. E. Cheeseman, Secretary, Aviation Section, A. A. and M.U., Caxton House, Westminster, S.W.

### A Sound British-Built Monoplane.

Mr. Astley's "Birdling" monoplane did a really fine performance, though it did not get round the "Circuit" course. In flying from Brooklands to Harrogate and back it actually covered 400 miles, and, owing solely to engine trouble, made fifteen landings in that distance, though, after leaving Bedford, it flew 140 miles in two hours. On the return it spent several nights out in the open, merely covered by sheets, and on Saturday, July 29th, it was out in a field all night in the rain without a covering of any kind; yet nothing whatever went wrong with it, not even a wire broke, nor was anything about the machine replaced, the whole trouble being with the oil. This is certainly a good testimony to the workmanship put into the machine by the Universal Aviation Co., Ltd., at Brooklands. The machine has since been bought by Mr. Frank McClean, who is as good a judge of workmanship as anyone.

### The Success of the Normale.

It is worthy of note that Lieut. de Conneau, in winning the Circuit of Britain, used a Normale propeller, made by M. Ratmanoff to M. Drzewiecki's design. He used the same make of propeller in winning the Circuit of Europe and the Paris-Rome race. The British agents for this propeller are Mulliners, Ltd. THE AEROPLANE is given to understand that the Normale propeller is by no means the most costly of first-class propellers.

### A Naval Hydroplane.

Commander Schwann and Lieut. Boothby, of the naval airship tender *Hermione*, at Barrow, conducted trials with a hydroplane at Cavendish Dock on August 2nd. The machine, formerly an ordinary Roe biplane, is fixed on to two floats, which are made of aluminium. Commander Schwann was the first to start, but, owing to not having speed enough, he was unable to turn, and had to stop his engine, a steam pinnace going to his assistance. On the hydroplane being brought back to the shed Lieut. Boothby had a try. He negotiated the turns with ease, and then, putting on more power, commenced a trip round the dock.

The effort is very creditable to the naval men, but why should they experiment at their own expense when the Admiralty already owns the two Valkyrie monoplanes presented by Mr. Barber, and still reposing in their shed at Hendon?

### Hendon on Bank Holiday.

On Bank Holiday Valkyries out at 4 a.m., Captain Loraime receiving instruction from Mr. Barber. Numerous ascents and descents was made, and short circular flights. Later on Ridley-Prentice was taken up. Greswell on the Blériot, Hubert on the Farman, and Hamel on the Blériot two-seater, also flew. The last-named ascended five times in all, having a passenger with him on four occasions. One of them was Mr. H. Barber, the Valkyrie pilot, who thus made his first flight as a passenger.

### Shoreham to Dieppe.

Further developments have now been made in connection with the proposed race from Brighton-Shoreham Aerodrome to Dieppe. It is suggested that another race also be held from Dieppe back to Shoreham. The race was originally arranged to take place on the 12th inst., but as Vadrines will be unable to compete on that date, it has been postponed until some time in September.—(C. A. C. Winchester, Shoreham correspondent.)

## The Week's Work.

## Monday, July 31st.

**BROOKLANDS.**—A busy morning. The Comte de Montalent on the Bréguet and Chevalier on the Nieuport, both out early, tuning up for inspection by officers of the Air Battalion. Both flying high. Blondeau came out, but was brought down, after one circuit, by Gnome trouble. Considerable interest caused by arrival of Barber from Hendon on Valkyrie, with passengeress, en route for Shoreham. Lady explained that she was taking a holiday, by doctor's orders, on account of her nerves. Good cure for nerves, a trip to Brighton at a few thousand up. After short rest Valkyrie and crew proceeded, to be followed a few minutes later by Astley, arrived from Maidenhead, where the "Birdling" had been anchored out in the rain for two nights on way back from Harrogate. In afternoon Comte de Montalent did some flights observed by Captain E. M. Maitland and a Mr. Green, from the "Army Aircraft Factory," who was taken up for a passenger trip. To be hoped that observation of a real flying machine was educative. Watkins out with Vickers L. in good style at 300 ft., doing circuits and taking passengers, including Mrs. Marion-Wilson. Pixton out on military Bristol, and Spencer on Spencer biplane, now fitted with a Gnome. Latter doing circuits and taking passengers. New Flanders monoplane out with E. V. B. Fisher at the wheel.

**SHOREHAM.**—Barber came over from Brooklands on his Valkyrie, accompanied by a lady passenger. Before his arrival he descended at Steyning owing to slight engine trouble.

**EASTCHURCH.**—Lieutenants Gerrard and Gregory and Mr. McLean were taking their morning appetisers between 4 and 6 a.m., all going well. Mr. Whitaker was also out practising.

**HENDON.**—On Monday, 31st, Mr. Dyott qualified for the last tests of his brevet. Mr. Dyott is a very keen and careful pilot; he handles the Bleriot machine with considerable skill, his descents in *vols planés* being particularly worthy of mention along with his delicate landings. In the evening Captain Hamilton was making a few good circuits round the aerodrome, and the other pupils were also practising on the school machines. Mr. Barber, on Valkyrie, commenced the first "Brighton return" flight with a passenger, Miss Trehawke Davies.

## Tuesday, August 1st.

**BROOKLANDS.**—Johnstone out on old H.W.-E.N.V. with Lang as passenger going strong. Mrs. Hewlett on Blondeau biplane doing circuits all alone on the machine. First time in England an Englishwoman has made a circular flight. In evening Chevalier doing test flights before Captain Burke and Lieutenants Barrington-Kennett, of the Air Company, in a puffy wind. Work brought to an abrupt end by poor young Napier's fatal smash, referred to elsewhere.

**SHOREHAM.**—Mr. Barber left for Brooklands at 8 a.m.

## Wednesday, August 2nd.

**BROOKLANDS.**—In early morning Barber arrived from Shoreham. Nothing doing then till evening, when Comte de Montalent on Bréguet and Chevalier on Nieuport turned out to

do test flights for Captain Maitland and Lieutenants Barrington-Kennett and Reynolds, of the Air Company. Captain Maitland and Mr. Reynolds both up as passengers with de Montalent. Fisher also out on the new Flanders, which lifts with great ease and seems to handle nicely.

**HENDON.**—Captain Loraine evidently enjoyed passenger flight previous week, for he became a pupil at the "Valkyrie" school. Windy weather responsible for little flying after Mr. Barber's return on Wednesday morning from Brighton.

## Thursday, August 3rd.

**BROOKLANDS.**—Fisher out on new Flanders machine, and found a right-hand bend very sweet and easy. Then made a left-hander, but found, to his annoyance, that the machine would persist in turning sharper and sharper, slipping inwards on the turn, and because the engine was pulling atrociously, steadily dropping into the sewage farm—the same spot, in fact, in which the Martinside tried to let him down a few days ago. However, by diving to about 2 ft. from the ground, he managed to regain control, landing somewhat roughly and bursting a tyre. Chevalier off to Farnborough at 5.25 a.m., staying the night. Mrs. Hewlett took out the Blondeau-Farman, and was doing banked circuits at about 3 ft.

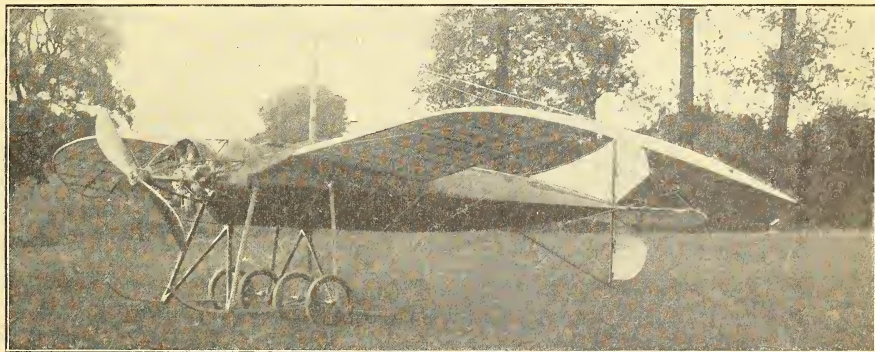
## Friday, August 4th.

**BROOKLANDS.**—In morning Mrs. Hewlett doing circuits in good style, alone on machine. Spencer on own engine-behind biplane up at 150 feet. Raynham out in gusty wind on Avro-Farman, not lifting well. In afternoon, De Montalent on Bréguet started for Farnborough against wind, but had to put back. Later in day Chevalier on Nieuport arrived from Farnborough, and landed down wind, taking half the length of ground to stop in. Speed from Farnborough somewhere about 90 miles an hour. At 6.47 p.m. Valentine arrived from Shoreham, completing the "Circuit." Enthusiastic reception by the few people present. Machine in really excellent condition considering hammering it received. Wings particularly good, and state of fabric admired by everyone. Prolongation of celebrations carried on at Heath Club till small hours.

## Saturday, August 5th.

Cody arrived quite unexpectedly about 8.50 a.m. from wrong side of track, behind sheds. Had flown all the way from Salisbury via Shoreham, 116 miles. A magnificent performance. Last section in wind varying from 18 to 35 m.p.h. in puffs. Came round Byfleet, and dropped in over Bristol shed. Everyone present rushed to greet him. Cody's first remark was, "I guess that wind's enough to shake Pixton up." Our old friend as cheery as ever, pleased to be finished, and proud to have got the only All-British machine through. Also in great feather over regular running of his Green engine. Cody has always believed in the Green, and now his belief has been more than justified. Time from Shoreham, 25m. (90 m.p.h.).

Gale blowing rest of day till near dark; then Chevalier out on Nieuport for half an hour or so. Percival also out.



The new Radley gull-wing monoplane. Note the streamline body, and the neat fixing of the engine.



**SHOREHAM.**—Cody arrived 6.15 a.m. after rough and trying journey. Starting from Salisbury 4 a.m. was in air 2½ hours. Left for Brooklands at 8.25 a.m. Trains which passed aerodrome at time of his departure much resembled school excursions. Everyone wanted to get their head out of the window at one and the same time. Dire consequences.—(C.A.C. Winchester.)

#### Sunday, August 6th.

**HENDON.**—Five a.m. Inventor of Valkyrie brought new military type B passenger carrier off the stocks for trials. First made solo flight, then so satisfied with behaviour of the machine that he made only a few circuits of aerodrome before descending and inviting Ridley-Prentice to come up as passenger to test weight-lifting propensities, for which it is designed. Moderate, but gusty wind blowing, but with fuel tanks quite full, machine rose with its passenger in remarkably short space, reaching 150 feet after only half circuit. Fifteen minute flight ensued, but gusts becoming very fierce, Mr. Barber wisely descended, landing with fine *vol plané* in front of sheds. Tests in every way highly satisfactory, and all now ready for further big cross-country flights already booked at the offices of the Aeronautical Syndicate, Ltd.

**BROOKLANDS.**—Nothing doing till late, when Chevalier brought out the Nieuport almost in the dark.

#### London-Brighton and Back by Valkyrie.

Mr. Barber, the inventor of the Valkyrie, seems to be establishing a regular passenger service between Hendon and Brighton.

On Monday of last week Mr. Barber took out the 50 h.p. Gnome-Valkyrie racer at 5.55 a.m., and ascended with Miss Davies in a slight breeze. In two circuits of the aerodrome they reached 500 ft., and at six o'clock passed over the boundary of the flying ground in the direction of Brighton. Before reaching Harrow the wind had increased from the south, so it took half an hour to arrive over Brooklands, at an altitude of 1,500 ft.

Owing to the strong head wind Mr. Barber descended there for extra petrol. After staying ten minutes the pair started again, flying at 1,400 ft. Higher up the wind was found to be very gusty, the aneroid registering drops of 100 ft. in a few seconds.

When in sight of Lancing College and Shoreham Aerodrome they ran short of petrol, owing to being delayed by the strong head wind, and made a forced descent near Steyning in a four-acre field surrounded by trees. It was rather difficult to get out, but they succeeded, flying through a gap in the trees, with 3 ft. to spare; and in five minutes landed at Shoreham.

They started to return at 7.56 a.m. on Tuesday, in spite of a twenty-mile-an-hour wind. At 1,000 ft. they got into clouds, and the wind increased to about thirty-five miles an hour. In ten minutes the Valkyrie was over Horsham, where it came down on the golf links, 1½ miles north of Horsham, at 8.7 a.m., having travelled at about ninety-five miles per hour. Thousands of people from the surrounding country came to see the machine.

Half a gale of wind blew all day, and it only calmed down towards 8 p.m., when Mr. Barber gave a demonstration. A charge of 6d. and 3d. was made, and about 6,000 people paid to come in. They were rewarded by seeing a flight at 2,000 ft. The proceeds were given to the local cottage hospital.

The voyagers were hospitably entertained by Mr. C. J. Lucas, of Warnham Court. At dawn of Wednesday Mr. Barber flew the machine from the golf links to Warnham Court, and alighted on the lawns immediately in front of the house to pick up his passenger.

In spite of adverse conditions the Valkyrie made a non-stop flight to Hendon, arriving at 6.10 a.m. The greater part of the trip had been made in a high wind, but, nothing daunted, Miss Davies expressed her desire to make a Continental tour on the Valkyrie machine.

So much mist was encountered on the journey that Mr. Barber had to rely almost entirely on his Clift compass, which worked admirably.

#### London to Paris Again

Védrines flew his Morane-Borel back to France on August 4th. He intended making the trip on Thursday, but, word having been received that there were signs of a storm on the French side, the flight was postponed. Védrines was at Hendon as early as 2 a.m., but mist delayed his departure until nearly six. At 5.55 a.m. he got away in a light breeze. He was seen over Dover at 7.15 a.m. From Boulogne he followed the coast to Dieppe, where he came down at 8.40 a.m. He did not restart until 6.5 p.m., and then, with a strong following wind, he covered the remaining 108 miles in seventy-five minutes, a pace of 86½ miles an hour. He landed at Issy-les-Moulineaux at 7.20 p.m.

Védrines' performance was notable, but it was not a record flight, for, on April 12th, Prier, on a Blériot, did an absolutely non-stop flight between the same points, leaving Hendon at 1.37 p.m., he reached Issy at 5.33 p.m., having covered the 250 miles in 3h. 56m. Védrines, by going to Dieppe before making for Paris, covered about thirty miles more than Prier, and, including the stop, took 13h. 25m. for the journey. Deducting the stop, Védrines did his 278 miles in four hours, an average of 69½ miles an hour, for which his fast flight from Dieppe to Paris with the wind was responsible. Prier's average was sixty-three miles an hour. Consideration must be taken of the fact that Prier's Blériot was weighted by three petrol tanks, to ensure his being able to do a non-stop.

#### World's Distance Record again Beaten.

Renaux, who distinguished himself in the Circuit of Europe by carrying a passenger from beginning to end, and classing himself in the first half-dozen, on August 7th beat all distance records, flying backwards and forwards between St. Cyr and Chartres. Both he and Védrines had entered last week for the Coupe Michelin, which, up till Monday, was held by Loidan with 438 miles, which he accomplished at the Camp of Châlons. Renaux started at exactly three o'clock on Monday, and continued with clock-like regularity flying to Chartres and back. At ten o'clock he had covered 375 miles, and at ten minutes past three, or after a little more than twelve hours, he completed about 600 miles, a truly remarkable performance, which puts him in possession of the cup until Védrines or some other champion beats it.

After 431 miles he had to land abruptly owing to part of the fabric becoming torn. The lower plane of the biplane was damaged, but the aviator himself escaped unhurt, and was able to repair and continue, as the rules only stipulate that thirty-four miles shall be covered in each hour, while his average speed was just under 50 m.p.h.



Radley (in seat) and Moorhouse (standing) with the new Radley monoplane.



## Bank Holiday at Brooklands.

Those who hold that the British public, or such portion of it as goes to Brooklands on a race day, does not take an interest in aviation, must have been convinced of their error on Monday, for, considering that "everybody is out of town," there was an uncommonly large and appreciative audience at the aerodrome, and the said audience would have been considerably larger but that the mere appreciator, as differentiated from the enthusiast, did not feel like facing the Desert March round the new road on a blazing August afternoon, when the motor racing was over. One always expects to find the bleached skeletons of camels alongside that track, and a raid of Bedouins on the footweary caravan would be quite in the picture. However, there were enough cars present to bring quite a large crowd to the sheds.

The first machine out in the morning was the huge Walton-Edwards, which made a short flight and then began to wobble. First one wing-tip touched ground, then the other, and then the machine, in a slow and dignified manner, stood on its head and turned over on to its back, the pilot and his assistant hanging upside down in their seats in a most acrobatic manner. Surprisingly little damage was done, and the machine should soon be out for trial again.

Soon after 10 a.m. Cody turned out for the Manville Prize. After re-reading the rules and consulting authorities both he and Pixton agreed that Cody was still eligible. The debated rule reads: "In order to qualify for the prize the competitor must have remained in a continuous flight with his passenger for at least fifteen minutes on at least half the days on which any competitor shall have made a recorded flight in this competition." The rule is very ambiguous, for it might mean "any other one competitor," or it might mean "at least half the days on which flights by competitors have been recorded." As it is, Pixton has made recorded flights on four days and Cody on two; and there is still one day left. If the rule be interpreted in the former way Cody can fly three days to Pixton's five, so is qualified. If in the latter way Cody can only fly three days out of seven, and so is not qualified. Which is it?

Anyway, Cody did a flight of half an hour, taking with him as passenger a cheery young budding aviator named Booth, ten years of age, and weighing 5 st. 2 lbs. Cody is a feather-weight of 15 st. 8 lbs., so between them they raised 20 st. 10 lbs.

Cody's flying was absolutely masterly, especially later in the day when the sun was full out, the wind up, and all the *remous* working at full power. Cody's first flight lasted about half an hour, his second twenty-three minutes, and his third eighteen minutes, giving him over an hour's total and putting him about level with Pixton. The official marks are not available at the moment of going to press, but the flight on the last day of the competition will be a hard one.

Pixton had the hardest of luck, for the carburation of his E.N.V. went wrong owing to the heat, and gave too rich a mixture, with the result that the engine overheated every time before he could reach the qualifying quarter of an hour, though the machine itself was flying exceedingly well in spite of the wind.

In the evening, when the sun went down somewhat and the air steadied, there was some magnificent flying. Pixton on the fine old school Bristol, which has trained all the Brooklands pupils, and has been condemned to disintegration by the Bristol Company on account of its age, won the aggregate time competition with approximately 1h. 43m., Raynham, on the equally old but much more decrepit Avro-Farman being second with 1h. 29m. De Montaleant made a splendid flight on the Bréguet. With a passenger he flew for about an hour in the dusk and descended in the dawn. He had fitted a barograph to his machine to record his height, and when he came down it was found that he had ascended 1,400 metres, or 4,300 ft., which sets up a British height record for a passenger flight. There was scarcely any wind at night, and as there was a full moon Raynham went up again, taking a passenger with him. Chevalier, on the Nieuport, was flying round and round for hours, much to everyone's admiration, his last flight being by moonlight. Johnstone, on the Howard Wright-E.N.V., also flew long stretches and carried passengers.

## Aviation in Australia.

Much interest is being created in Australia, as is reflected in a recent article in the *Sydney Daily Telegraph*. It will be noticed that the point which has struck our Australian cousins is that, although the Bristol biplane referred to has flown 765 miles, there has been no bill for repairs, and the comparison which is made between this record and that of the average motor car should help to convince those who are still sceptical as to the possibilities of the aeroplane as a means of locomotion. The article says:—

"Prior to the advent of this machine the people in this State scoffed at aviation. They had seen Houdini perform a sort of hop-skip-and-jump around the Rosehill racecourse on his Voisin machine. They had also seen Defries guide, with tolerable accuracy, a Wright biplane around the Victoria Park course—but it was on the ground all the time, and remained on the ground, in spite of sensational reports that appeared in British aeronautical journals to the effect that magnificent flights were made in Sydney. Naturally the Sydney public were somewhat dubious as to the practical value of the aeroplane.

"The Bristol biplane flights have given people something definite upon which to focus their impressions. If you had suggested to a person in Sydney three months ago that the city would shortly hear the chugging of an aeroplane engine overhead, he would have suggested that a vacancy at the Gladesville Asylum could be more appropriately filled. To-day the average man in Sydney is longing to join Mr. McDonald in a flight. It is an interesting record that the Bristol machine has achieved in Australia. Altogether 72 flights have been made with the one machine since it arrived in Australia. Mr. Sydney Smith, manager of the British and Colonial Aeroplane Company, stated yesterday, and these included flights across the cities of Perth, Melbourne, and Sydney. The actual time that the machine was in the air exceeded 20 hours, while the actual distance travelled was 765 miles, the figures being as follows:—Perth, 7 flights; Melbourne, 34; and Sydney, 31. On 40 occasions the pilot was the sole occupant of the machine; on 31 occasions a single passenger was taken; and on one occasion in Melbourne two passengers were carried.

"But the most remarkable record of all is that the 765 miles were accomplished without a single mishap or breakage. There was no repair bill. Not a single bolt or wire

had to be replaced. Could the same be said of a 765 miles' journey in a motor car? Here, again, we find that public opinion has suffered a complete reversal. The popular idea was that the aeroplane was a fragile, delicate creation, which had to be handled like *Sèvres china*, and that, at least, the chassis was smashed when the aviator descended to earth.

"As to the permanent benefit that will accrue to Australia by the demonstrations, perhaps the most important will take the form of a military aerial corps. The value of the biplane for military observation in war-time was evident by a glance at the photographs secured during a flight at an altitude of 2,500 feet, and this will certainly give an impetus to the establishment of the aerial corps which was mooted before the Bristol machine was seen in Australia. Another important result that will accrue is the establishment in Melbourne of an aviation school, where Australians will be afforded an opportunity, at a fee of about £75, to decline the verb 'to fly' in all its tenses. Mr. Sydney Smith says that in a month's course at this school, which will be in charge of Mr. McDonald, any of the as yet unfledged aviators can be taught to fly like a homed pigeon, and will be able to qualify in that short period as a pilot aviator of the Aero Club of Great Britain.

"When he came to Australia, Mr. Sydney Smith says he realised that people were not taking aviation seriously. He has now been able to awaken general interest, and he believes that within twelve months there will be a big boom in aviation in Australia. So far there has not been much evidence of practical interest, but he believes that many machines will be purchased in the next few months, especially when aviation is taken up by the squatters on the flat plains, where flying is, to quote his words, 'absolutely safe.'

"Yesterday afternoon a start was made to take the Bristol biplane to pieces. In the morning Mr. McDonald had a busy time, as he made five distinct flights, aggregating 100 minutes. He took Brigadier-General Gordon for a 36 minutes' flight, during which time he passed over Botany, Bare Island, Centennial Park, Randwick, Victoria Barracks, Rose Bay, Federal Government House, and then back through the city, keeping over George Street for a great part of the way. The other passengers who had flights yesterday were Mr. A. J. Vogan, 16 minutes; Mr. R. G. Todman, 18 minutes; and Mr. Coles (the company's mechanic), 20 minutes."

## "Vickers No. 1."

"Vickers No. 1" has now departed this land, and is on the way to Australia, where Lieut. Watkins will use her for exhibition flights for a time, after which she is going to assist in Dr. Mawson's Antarctic expedition, but during her short stay at Brooklands I obtained the accompanying drawings.

The Vickers monoplane is built, for the most part, under R.E.P. licence, though it diverges in various ways from the R.E.P. itself.

It is a steel-built machine, wood being used only for the two skids and for the ribs of the main planes.

The wings are built on main spars of steel tube, and have a camber which at present, alas, is "peculiar," i.e., it is really well designed, and is related to the old and successful "Phillips entry." Owing to the great depth of the fuselage it is possible to stay the wings from the bottom of the fuselage, instead of from the skids—an excellent idea, as it relieves the chassis of an immense amount of work.

The stays are of high-tension steel strip; 110-ton steel, in fact. In conversation with Mr. Low, I asked why he used this strength. He replied that 140-ton steel is too brittle, while 70-ton stretches, and that he regarded 110-ton as the perfect medium. I must say that, personally, I incline rather to the use of 90 or 80-ton steel, as I think 110-ton too brittle, and have not noticed much stretch above 60 tons.

The cabane is very ingenious; the front spar is stayed from a tripod level with the leading edge of the planes. The upper or compensating warp wires are fixed to a single mast with a joint at the bottom. The mast is stayed fore and aft, and swings sideways when the warp is used. The lower warp wires are not round a pulley, but are made of strip, and are attached to a "wrist-plate" worked from the control lever by a push-and-pull rod.

The fuselage is very deep at the front end, as mentioned above, and is somewhat peculiar. It is built of steel tube, sweated and pinned into sockets, and wired in the ordinary way. From the nose to the pilot's seat its cross section is a rectangle with an inverted triangle below it, and it is covered

with aluminium sheeting. Aft of the pilot's seat it is of diamond section—by which I do not mean that it has the duodecahedral appearance of a lady's earring, but that it is like an albino pip of the "Curse of Scotland" (for the Vickers, unlike the R.E.P., is white). This part is fabric-covered. The empennage, fin, rudder, and elevators, are steel-framed, and are worked by very short levers, the control wires being all inside the fuselage.

The pilot's seat is just in advance of the rear wing-spars, the passenger's being about on the centre of pressure. Both seats are deep within the fuselage. The control is by universal lever and foot rudder-bar.

The chassis is most excellent, combining the best points of the R.E.P. and the Farman. It consists of a pair of Farman skis, with the usual four wheels. The skids, however, instead of being rigidly strutted to the fuselage in the usual manner, are attached by radius rods, whose other ends work on pin joints at the bottom of the fuselage, and by spring-controlled struts working in guides up the fuselage sides.

The power plant of this particular machine is a French R.E.P., as the Vickers engines were not ready in time. The Vickers R.E.P. is a five-cylinder, air-cooled, semi-radial engine. The valves are overhead, and there is to each cylinder only one tappet rod, which works both valves. It will be remembered that it was one of these engines which went through the Circuit of Europe without any adjustment whatever, and that another held all world's records from 100 kilometres up to 350 miles at the end of last year. A Régy propeller is used.

I have to thank Captain Wood for allowing me to measure up the machine for THE AEROPLANE. I hope and trust that he will find the accompanying drawings correct. P. K. T.

\* Those of our readers who are not card-players may be glad to be reminded that the name of diamonds has been referred to as "The Curse of Scotland" ever since the order for the massacre at Glencoe was, according to the legend, written on the back of such a card.—(ED. AEROPLANE.)

### The Death of Gerald Napier.

Poor Gerald Napier's death was, I fear, one of those things which most of us foresaw and none of us could prevent, and no one was in the least to blame for it except the poor lad himself. Those who saw him learning to fly lived in momentary expectation of an accident from the time he left the ground till he got back again. On the evening of his death, the moment he started out on his new machine everyone knew there was going to be a smash, and several men went back into their sheds rather than stand and watch him, hoping that when the smash came it would let him off lightly.

The way the affair happened was this: Napier had bought the red-winged racing Bristol, with a 70 h.p. Gnome, which Gilmour was to have flown in the Circuit of Britain. On Tuesday night he came down to fly it for the first time, not having been on a machine since he made his certificate flights on the ordinary type Bristol. When Napier arrived Pixton suggested that he had better take the machine out first, and see how she was behaving, but, being weatherwise, Pixton said he would wait till the wind steadied down, as it was very gusty at the time.

Napier, with the impatience of youth—he was only nineteen—insisted on taking the machine out himself. His first flight was, I am told, horrible to watch. He took the machine, which, as those who saw Gilmour on it before the start of the Circuit will remember, was a very fast one, up at an angle at which it was depending entirely on its big engine, and then proceeded to do alarming evolutions, switching his engine on and off while still climbing with the tail down.

Apparently he could not get used to having the elevator so far below him as it is in the new type, and he seemed to be constantly getting the elevator up and the tail down, with the result that he would climb steeply for a while and then switch off, so that the machine would drop in a kind of "pancake" instead of coming down at her proper gliding angle. Then he would switch on again and the engine alone would save a smash.

After a couple of flights alone he took one of his mechanics for a short trip, and then took up a friend named Laurie. As there was no place for a passenger Laurie had to sit on the petrol tank, almost in a standing position, so raising the centre of gravity, and also the centre of head resistance.

The pair did a circuit or so, and then came straight up

the centre of the ground towards Blyfeet, as if about to land, but, when opposite the end of the main block of sheds, Napier started a sharp left-hand turn, with the tail badly down. At a height of something about 100 ft. he swung round, and the machine began to move heavily towards the left. The tail being down, and some of the way being lost, she started to slide inwards, just as Lieutenant Porte's monoplane did at the start of the Circuit.

The rudders then took charge, and held the tail up so that the side-slip was converted into a dive, and, with good driving, the smash might even then have been prevented. But the poor boy apparently lost his head completely, for he kept his engine running full open, and never even attempted to flatten out and skim along the ground. Instead, he held the nose down, so that the first thing that hit the ground was the front elevator, and then the left wing, both of which crumpled up, as well as the whole front of the machine, which in this type consists of skids turned up to meet the elevator booms.

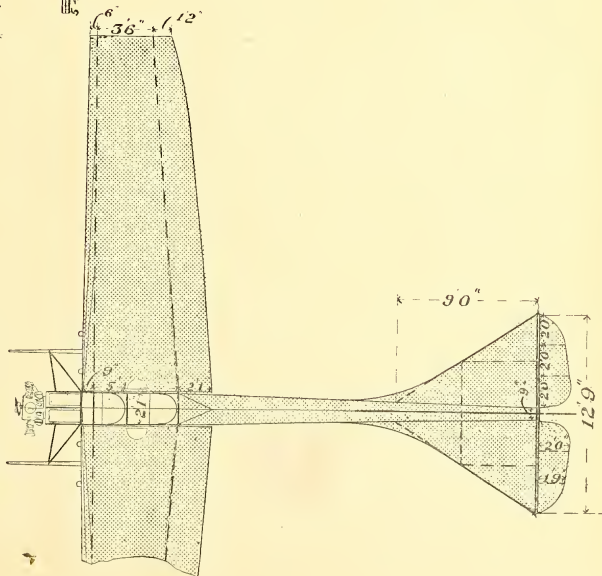
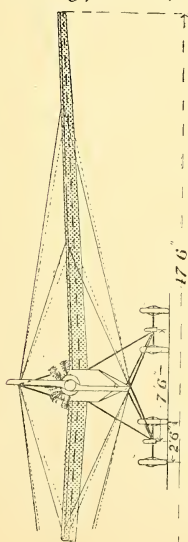
Laurie, standing up, was flung clear over Napier's head and slightly sideways, escaping with a shaking, but Napier received one of the broken skid-struts in the jaw, the shock forcing his head back and fracturing the base of his skull.

It has been reported in several papers that Napier was crushed by the engine, but such is not the fact. I saw the wreck not long after the accident, and the engine was piled up on the top of a mass of debris, composed of the pilot's seat, the remains of the tanks, and other oddments, and Napier's body was picked up in front of all this, not underneath anything.

The fall alone was not enough to kill him, or his passenger would not have escaped, and it was certainly very little worse than Latham's or Porte's recent smashes at Brooklands, and not so bad as Kemp's. In proof of this, the right wing of the machine was very little damaged, and the tail was not damaged at all.

### Beaumont's Generosity.

Beaumont, out of his prize-money, has sent a cheque for £100 to the Lord Mayor of London to be used for charitable purposes. He refers to the gift in a letter as a "modest expression of my great gratitude to England, where I have received such a generous and cordial welcome." This is typical, of those who know him, of Beaumont's fine and kindly feeling.



# VICKERS

Surface of Main Planes	290 sq. ft.
" Empennage	54 "
" Elevators	16 "
" Rudder	9 "
" Fin	11 "
Weight (without Pilot)	1000 lbs.
	Speed 56 m.p.h.

*Weight (without Pilot) 1,000 lbs      Speed 56 m.p.h.*

Engine: R.E.P., 60 HP; 1,200 revs per min.

Propeller: R.F.: 7' 11" diam. x 5' 3" pitch.

*W. H. C.*



### "Plain" Tales.

The Air Battalion has now been on the Plain for nearly four months. During the whole of that time they have been working under extreme difficulties, and a shortage of both men and machines.

It would almost appear that "those in authority" were anxious that the usefulness of aviation should be disproved. Possibly this is an injustice; the incorrigible incapacity and inerness of the War Office may be the sole reason. However this may be, the officers and men cannot be accused of any lack of desire to make their branch of the service a success; they have worked early and late, and though some of them have not had as much practice as they should have—owing to the above causes—they are an extremely capable body of flyers.

They go to Cambridge about the 25th of this month, and at the present moment they have two machines fit to fly. These are Capt. Fulton's Bristol and Capt. Burke's Farman. In addition to these there are two Renault Bristols. One is flown by Lieut. Reynolds, and the engine has never gone satisfactorily. The other is to be flown by Capt. Massy; he has just got it, as it has been terribly delayed in delivery by the engine, and so far its performances have not been inspiring.

In addition to these, two of the new type Bristols—those used in the *Daily Mail* prize—are to be supplied. This is one of those acts that passes comprehension. These machines are only built to carry the pilot; how they can be expected to carry a passenger at the same time is one of those questions to which only a War Office brain can suggest the answer.

It is on Capt. Fulton that the onus of these air manoeuvres is going to fall. That is to say, if they are a failure; if they are a success, of course some War Office authority will annex the credit. The only sensible things the War Office have done in this business have been to send the Air Battalion to the Plain and to put Capt. Fulton in command. Throughout the time he has been here he has worked hard and steadily, and had his advice been asked and taken in regard to the purchase of machines the present position would be very different. He possesses a practical and technical knowledge of aviation that would make him a useful adviser in any business concern—but then the War Office is not a business concern.

The pilots for manoeuvres are to be divided into two camps, with three pilots on each side. It is believed that Capt. Burke, Lieut. Conner, and Lieut. Barrington-Kennett are to share one camp, while Capt. Massy and Lieuts. Cammell and Reynolds are to share the other, or, in other words, a Farman and two Gnome Bristols on one side and a 70-Gnome Blériot and two Renault Bristols on the other. Capt. Fulton is going to act as spare pilot in case of need, as his time will be fully occupied in looking after and running affairs.

If this programme could be carried out, and all the machines could fly, the air manoeuvres, given average weather, would be successful. At present there are only two really tested machines, one Farman and one Gnome Bristol, the other G.B. is deceased.

Lieut. Cammell's engine blew out one of its cylinders during his plucky attempt in the *Daily Mail* race, and so his Blériot will not be ready again this month. Lieut. Cammell has been using this machine—his own property—for military work all this season. It is understood that the War Office did not insist on his paying for his own petrol, but it would be too much to expect of it to lend Cammell a 70 h.p. Gnome to go on with. If they had any sense of justice they would take over the Blériot as a Government machine. No doubt, though, they are sorry they cannot court martial Cammell for blowing off a cylinder.

Of the pilots themselves, Capt. Burke, Lieuts. Barrington-Kennett, Cammell and Reynolds, have all had plenty of practice and are hard goers. Lieut. Conner was a late-comer, and has not had so much practice as the others, but his fine flight to Farnborough with a finish and *atterrisage* in the dark, and his return here in a gale, show that he is perfectly capable of keeping his end up whatever happens.

Capt. Massy unfortunately has not had much practice owing to his machine having been delivered only this week. This does not seem to worry him at all; he proposes to make good at manoeuvres his lack of opportunity here. It is regrettable that his multifarious duties will only allow Capt. Fulton to fly occasionally; still, someone has to do the hard work—to get all the kicks and none of the ha'pence.

### Italian Notes.

The Italian correspondent of *THE AEROPLANE* writes:—

The Government are starting in upon aviation with great severity. At Turin no one but the timekeeper is allowed on the flying ground, everything being done by 'phone.

I see that Faccioli is flying for the first time in competition. The prize-money for the circuit of the Tiber may be given to Marra's widow, though there is, or was, another claimant, who will not get anything, as the race was never finished.

As the result of the recent mishaps in Italy, the Italian Chamber has been discussing the responsibility of those organising meetings and flights, and who allow aviators to fly under adverse conditions. All committees should be composed of practical fliers or technical experts.

Frey's accident appears to have been due to failure of his barograph, causing him to come into contact with the side of a hill, and particularly—luckily for him—with a tree thereon, though to all intents he should have been two thousand feet above any such obstacles and rising to clear a mist. There is an official inquiry being held as to a wire sent to the Florentine authorities which announced his descent safely a hundred miles away. Hence the absence of all succour for ten hours. The wings of the Morane remained on the trees, but the engine proceeded to earth, luckily before Frey.

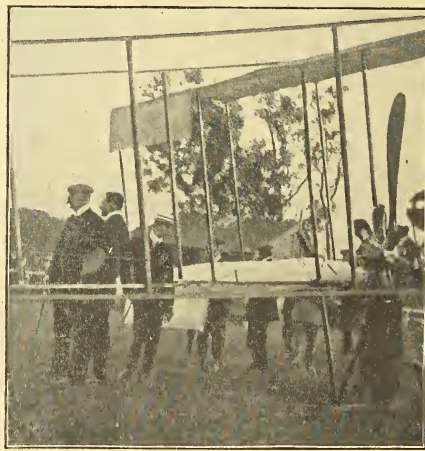
The Italian skies have seen a lot of our two newest stars, Manisero and Cobiainchi, recently. The former has been "exhibiting" most brilliantly in different parts of the country on his Blériot, while the latter, after a lengthy eclipse, has surprised everyone by raising the duration record for Italy to 2h. 8m. on a Farman.

In spite of the note of despair in a recent letter of Cagno to a leading sporting journal anent the impossibility of Italy going ahead without more financial support, I myself distinctly note slow, sure progress everywhere, and notably at Somma and Milan, where, by the by, a big gale has just done much damage, and whence I hear of the disintegration of Battaglia's propeller for the second time and his luck in effecting a safe landing without that important organ.

The military schools are to make a great show—and, I hope, get another big grant for it—at the manoeuvres next month with their two dirigibles—most energetic in action and un-German in their history—and four aeroplanes, all of which will, it seems, be allotted to the same party, the defending army, to aid and abet each other. Observation officers are now under training for their important duties as passengers.

A great moral blow has been dealt to many by the decision of the authorities to postpone the *Corriere della Serra's* National Circuit, with its £2,000 prize, till next year, when "our aviators will be more ready to make a brave show," or to be all in the bankruptcy court, suggests a well-known pilot-instructor.

On the other hand, as I wrote you before, Italy is neither France nor England as regards those open and uncultivated spaces so conducive to cross-country travelling. Indeed, real pasture land or commons scarcely exist.



Lord Raglan, Governor of the Isle of Man, with Grahame-White, on the occasion of his recent exhibition flight.

## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

### The Danger of "Banking."

SIR,—I hardly thought at the time of writing my former letter under the above title that I should be required to write another in explanation of same, but Mr. "Planetorque" has obviously read it with a different understanding from that with which the writer wrote it.

Of course, I was pointing out the danger of trick flying, although perhaps the head-line was a trifle misleading. Possibly it might have been more to the point to have styled it "The danger of excessive banking," but then the joke would have been completely lost—which, after all, wasn't bad for a Scotsman.

Seriously speaking, there is far too much of the so-called trick flying, especially among some of the "star" aviators.

No, I have never seen a machine (fast or slow) turn a corner without heeling over a bit, but there is a profound difference between this and *causing the machine to take a corner at 45 degrees*, and in some cases to such a degree that a dive following is compulsory. There is truly danger here, and, moreover, I feel sure, "Planetorque" cannot deny it.

In the case of speed competitions, to which he refers, there must be risks run, the temptation of possible fame and large monetary awards outweighing the thought of danger, but with the mere foolhardiness of the thing I know you, sir, and "Planetorque" cannot agree.

As regards the comparison of the Wright machine and the old type Voisin, the latter, however clumsy, was infinitely safer.

Good solid flying—the more the better; but "circus performances" must, in the long run, be detrimental to the cause.

### A Correction.

SIR,—In reference to the Deperdussin drawing recently in THE AEROPLANE I should like to draw your attention to a slight misprint in giving the surface of the elevation at 130 square feet; it should be 13.5; also the rudder works out at 5.6, and not 6 as marked. Knowing you like to be accurate, I take the liberty of pointing this out.

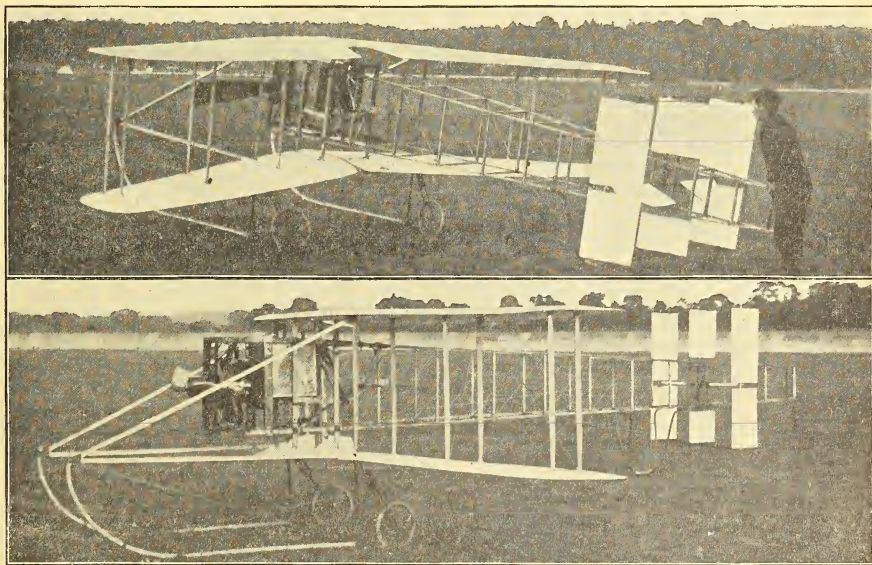
E. KEITH DAVIES.

[Thanks and apologies from an overworked staff.—Ed.]

### Flying over Towns

SIR,—Considerable prominence has been given lately to the Royal Aero Club's prohibition concerning cross-town flying. Even the Government has at last taken the matter up, and has given the Home Secretary practically despotic powers over air-craft of all descriptions; and further, a short Bill was rapidly passed through Parliament dealing severely, even after some modifying amendments, with flights over the Coronation processions, the review at Spithead, and other displays at which their Majesties would be present. No doubt such precautions were necessary, for reasons into which we need not now enter, but care must be taken by the Government, and also by the Aero Club, not to hamper the progress of flight by excessive restrictions.

Undoubtedly the prohibition of the club was necessary when it came into effect, and is useful now in preserving us from the "stunts" or "fool-tricks" of aerial mountebanks. But a prohibition might still have evil effects even if modified to a certain extent in order to give more latitude of flying to reasonable airmen. The danger from such flights over towns used to lie, as everyone must know, in the liability of the aeroplane to fall on the people below though one of the many ills to which air-craft were heirs. I hope to show, however, that these defects have been greatly lessened and are, to a certain extent, a negligible quantity.



**THE MACFIE THEORETICAL BIPLANE.**—This interesting machine is an attempt, on the part of Mr. R. F. MacFie, to build a very fast and stable biplane. The back-swept planes are intended to aid both lateral and longitudinal stability, and the large rudder area is designed to control lateral stability even more than warping does. The chassis, which is obviously too light, gave way at the first trial, but the ideas in the machine are worth going on with.



First we have engine trouble. This has always been a source of annoyance to aviators, and has frequently been fatal, but, thanks to the excellent progress made in reliable aero engines, it has been greatly lessened, and one has now a large choice of dependable aero engines; moreover, such a failure now, with a moderately skilful pilot, necessitates merely a gentle glide to earth, from which fact it must follow that the higher he is in the air, the greater choice has he in the matter of suitable landing places. Thus, to take two recent cases in which Mr. Gilmour was concerned, the aviator had in one case the river and in the other case the adjacent meadows to glide down to in the event of motor failure.

Secondly, we have the danger of a control wire, or a stay wire, breaking in mid-air; but here again this danger is avoided in many of our principal machines by having all important wires double. While on this subject, I may add that the increasing excellence in workmanship which is put into the other parts of their machines by the leading firms makes the danger of any breakage very slight.

Thirdly, there has always been the danger of wind currents and other natural phenomena, which are quite out of our control. But on this subject we learn more every month, and it could very well be made an offence to fly over crowded areas in windy weather. Lastly, there is the lack of skill of aviators, but their skill is so much greater to-day that any certificated pilot can now fly almost anywhere in reasonably calm weather.

Thus flying might now be permitted over towns with the following provisions:—

1. All control wires and other important wires to be double.
2. All machines to be inspected as to their airworthiness on coming from the factory.
3. The pilot to keep within easy gliding distance of a suitable landing place.
4. The pilot to fly above any height to be nominated by the committee.
5. No town-flying to take place in windy weather.
6. Only fully certificated pilots to fly over towns.

These provisions need little explanation; experience and a few endorsed licences will soon prove what wind is "too windy," and as the work of inspecting all machines would be heavy a small fee could very well be charged for expenses. The work could be done either by the Aero Club or the Government, but I would venture to suggest that aviators would obtain more fairness from a club committee of practical flying men, and I heartily agree with the Editorial Notes of No. 6 of THE AEROPLANE that firmness on the part of the Aero Club would prevent any need for Governmental law.

Moreover, the advantages gained by this amount of town flying would amply compensate for any slight accidents there might be. Apart from the ability of the pilot to make more of a crow-flight from place to place, it would do more than anything else to popularise aviation by giving town-dwellers glimpses of a machine in flight not at the local flying-ground.

A few accidents, even a few of the "terrible accidents" so beloved by the yellow press, must be expected, but if aviation increases as fast as it has done, these will not reach very alarming figures.

A. E. BUTTON.

### The Birmingham Club Glider.

Sir,—Recently I sent an account of the second Birmingham Aero Club's glider. Mr. Platt's (the first) has not been out since the Bourneville meeting, where a few successful towed flights with this glider were obtained. As to our own machine, things have been rather against us, but there is now a bright outlook in front, and we hope soon to be very busy.

On Saturday, June 24th, we were making a few adjustments to our glider whilst waiting for our helpers to arrive, when we received a shock. We were told that Mrs. S. required us to move our machine at once, for several reasons; one was that they wanted the field for some other purpose, though it has not been touched up to the present. Why we were told to move I cannot even now imagine, but as we had obtained the field free of charge there was no help for it.

However, as it was impossible on so short a notice to move the machine, we obtained a week's grace. We also obtained permission to try the glider the day following. Luck was, however, against us, for the next day, although there was hardly any wind, what there was was blowing down the hill. However, Mr. Philip H. Oliver, Mr. Harry Nicholas, and myself each managed to get off the earth. Mr. Nicholas perhaps did the best glide, and landed just at a spot above where the hill begins to steepen. No doubt had the wind been favourable, and he could have managed the glider all right, a glide of at least two yards would have been accomplished, but, as it was, it wasn't. The week following we had the glider dismantled and stored near by whilst another ground was looked for.

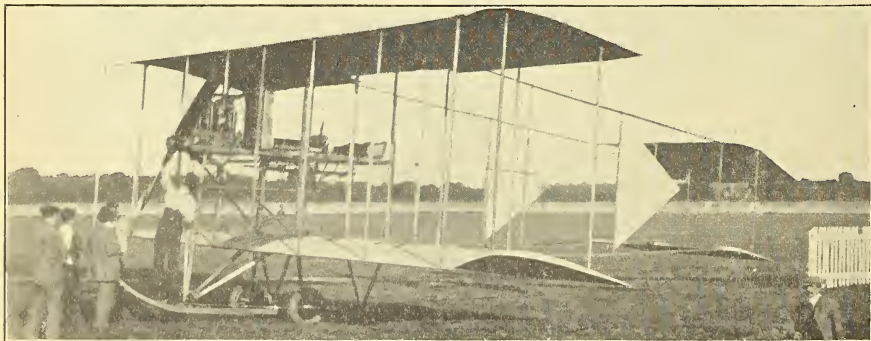
The Birmingham Aero Club during the last three weeks have been very busy looking for a ground which is suited to model fliers as well as glider fliers. As a result a very extensive piece of ground on Bilesley Farm has been taken. This has two hills, sloping in opposite directions. One is a short, steep one, about two yards, while the other is about 200 yards, but not so steep, the slope varying from 1 in 7 to 1 in 10. The length of the ground from end to end is nearly half a mile, and in my opinion is large enough for full-size machines to practice on.

We had another disappointment last Saturday, caused by the carter not turning up to remove our glider, which is at present about eight miles from Bilesley.

When everything is settled down, our ground should be as busy as any other club ground in the country, what with the model fliers, two gliders, and a power-driven monoplane.

Wishing every success to your paper, which I think is excellent.

G. HADDON WOOD.



The Walton-Edwards "Colossoplane":—Its enormous size may be seen by comparing the figures in front with it. This is another machine built on a theory. The front edges of the planes are warped instead of the back. The engine, pilot, and passenger slide back and forth to adjust the centre of gravity, and it has other original ideas in it.



## Concerning Engines Generally.

Sir,—At a most timely moment your recent remarks upon the subject of aeroplane engines appeared. It certainly is about time that reasonable comparisons should be made, and fair play meted out accordingly.

Respecting engine control (a somewhat neglected subject), one is completely at a loss to understand why any carburettor (however automatic) should be expected to be endowed with powers of human discrimination, so as to successfully cope with the three chief atmospheric variations of humidity, temperature, and pressure.

An unsuitable or "too rich" mixture of gas, combined with incorrect ignition timing, are together responsible for many ills, some of which are excessive fuel consumption, overheating, pre-ignition, pitting exhaust valves, cylinder warping, loss of compression, lubrication difficulties, sooting up of sparking plugs, misfiring, engine fatigue and therefore loss of power, and general unreliability.

In order to relieve the aviator as much as possible, the so-called automatic carburettor is probably desirable, as is also an automatic ignition timing device, but in any case the best results can only be obtained by providing three separate hand-control levers, viz., ignition timing, throttle valve, and extra air valve.

How many of the various Circuit machines were so fitted? Possibly the *Daily Mail* "Circuit" may teach us a little as regards aeroplane engines, that is, if the engine is considered to be a vital part.

Bramhall.

JOHN B. BUTLER.

Sir,—I see by your leading article this week that you still adhere to your opinion regarding rotary engines. Permit me to say a few words in their defence.

You say that Beaumont's and Védines' engines were "picked and carefully tuned . . . in the hands of absolute experts, and one of them gave much trouble." Is it likely that anybody would set forth to win the *Daily Mail* race without carefully tuning his engine beforehand? M. Beaumont told me personally that his motor ran perfectly throughout, but that he got hold of a bad consignment of oil in the North, which naturally caused him trouble.

Everybody would "pick" their engines on buying them if they had a chance. With regard to Valentine's and Hamel's engines, I believe they did give trouble, but I think I am right in saying that it was Audemans, and not his motor, that refused to go farther than Bedford. Cammell's engine burst a cylinder, but I have known the more orthodox type of engine blow cylinders off. I daresay some of the men who drive racing cars round Brooklands will say the same!

I gather that England's 50-Gnome had its work cut out to lift his machine when running perfectly, and as it evidently wasn't quite up to concert pitch at the start he had to give up.

My own motor never "peetered out" at all; it was simply gummied up with inferior lubricating oil. It was a wonder that it ran at all. As a matter of fact, I ran it 400 miles that week—all the whole time and never had a misfire. Weymann's motor ran perfectly throughout. He came down at Leeds to inquire his way, and smashed a wheel in avoiding the crowd at his restart.

Let us turn to the other type. Pixton's Renault gave trouble at Hendon, and then let him down at Spofforth. Porte's motor never went properly, even in practice, and the Austrian Daimler let Bier down. Reynold's carburettor was part and parcel of his engine, and it failed him. The Gnome has no carburettor to worry about, neither has it radiators, which caused Cody trouble.

In upholding the Gnome I am only giving justice where justice is due, but I sincerely hope that we shall soon have an English engine which will really prove its worth in the same way the Gnome has.

At the present moment the Gnome is at the top of the tree, and I am sure that, given their choice, 90 per cent. of aviators would choose it in preference to any other, except in the case of their machines being very heavy or inefficient.

Your final argument is hardly worthy of your paper. If the man in the street followed it (as I am afraid he is inclined to), he would be saying, "Because these lunatics choose to risk their necks travelling by air, why should I? I have the good old train—that's quick enough for me."

I have written more than I intended, and, as Voltaire says, "*Il faut cultiver notre jardin*," but I cannot stop without wishing your excellent paper all the success it deserves; it is far the best aeronautical journal.

H. J. D. ASTLEY.

[The Editor hopes to reply next week.]

## The Lesson.

Sir,—Writing in anticipation of an intelligent *resumé* of the lessons of the Circuit of Britain, I beg to suggest two obvious lessons.

Firstly, stronger under-carriages.

Secondly, ability to fly with reduced power.

It is to this latter point I wish to draw attention.

We know that practically every machine starting had been actually flown, and flown well, with its maximum power available. With less available, many flew badly, or not at all. The air speed being less, many machines lifted at a bad angle, causing loss of stability.

It appears difficult to alter the surface area of planes and undesirable to alter the incidence of main planes without conjointly altering their camber. This combination has not yet been successfully accomplished.

I suggest, therefore, altering the load on the supplementary planes, on the assumption (possibly erroneous) that this would not be an inefficient arrangement.

I assume a machine of Avro-Breguet type, with the engine extra far forward; this permits of a heavily loaded front elevator, which is controlled *à la* Sommer tail. The pilot's seat is in one unit with the main oil and fuel tanks, and can be moved fore and aft along the fuselage, Antoinette control allowing this to be easily done. As the engine power falls the load is shifted more and more forward, the super-loading of elevator allowing a slight increase of angle of incidence of main planes if considered desirable. I confess I have an axe to grind, as I am interested in a machine with a loaded elevator, which, as a comparatively small plane, has variable incidence and camber in a way inapplicable to large planes, but the machine referred to is not suitable for variable speed, as suggested above.

Chatham.

VENTRE-A-TERRÉ.

## A World's Record for England.

On Tuesday night, the Comte de Montalat, at Brooklands, on a Breguet biplane with a Canton-Unné engine, beat the world's record for height with a passenger, and incidentally the British height record for all classes of machines. He reached a height of 2,200 metres (or 7,200 ft. about). His barograph registered 2,250 metres, but from that should be deducted about 50 metres for the height of Brooklands above sea level. This is the first world's record ever officially made in England.

## Liverpool Model Aero Club.

Mr. R. N. Harrison has offered a prize for longest flight in the month of August. First competition to be held Saturday, the 12th, and on succeeding Saturdays. Entries must be received by the 18th inst. Only open to members. Another member, Mr. G. H. Kilshaw, has offered to make illuminated certificates for those who pass tests imposed. A flying ground has been generously offered free of rent by Mr. H. Pennington, of Bootle. It is situated in Hawthorne Road, adjoining Mr. Lord's tarworks and the Patent Fuse Firelighter Company. Members may fly there at all times, screened by two big buildings. Hon. sec., Alex. Grindrod Pugh, 39, Brook Road, Bootle, Liverpool.

## The Aeroplane,

### 166, Piccadilly, W.

Telegraphic Address: AERON, London.

Telephone: Mayfair 5407.

## SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
3 months, post free	-	1	8	3 months, post free	-	2	9
6 " " "	-	3	3	6 " " "	-	5	6
12 " " "	-	6	6	12 " " "	-	11	0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed. A/c of Payee only, otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.

## IMMEDIATE DELIVERY.

### 400-500 YARDS.

Complete set of parts for building

#### No. 3 "Aerial" Twin Propeller Racing Model

including all necessary Wood (planed), Main Aerofoil, Aluminium Elevator, Straining Wire Turrets, Rubber, etc. Finished Varnished Birch Propellers, Protecting Skid, full Instructions and Drawings.

**Post free 2/9**

We have been requested by numerous customers to design a more advanced Set of Parts and have pleasure in bringing to the notice of our Friends our

#### AT-17 Set

which, we feel certain, will meet a long-felt want for a model that will rise from the ground under its own power (not pushed), and after a long and steady flight will land lightly on its chassis. The set contains all necessary wood, finished propellers, material for aerofoils and chassis. Complete drawings and instructions. Securely packed in strong wooden box. Length 3 ft. 2 in. Span 2 ft.

**Post free 4/9.**

Mr. F. PHOLE, Lancing, Sussex, writes:—"I cannot help writing to you and expressing how delighted I am with A.T. 17 sets received yesterday. I built the machine in forty minutes, and got some graceful flights. It is really very pretty to see the No. 3 Aerial and the A.T. 17 in the air together. I am trying to get a good photograph of them flying together, and will send you one. A great point in the A.T. 17 is the graceful manner in which it lifts from the ground, which is very pleasing."

Look out for our Steam and Propeller Model Engines, weighing from 2 ozs. complete with propeller.

*More Testimonials next week.*

## THE AERIAL ENGINEERING WORKS,

### BALHAM, LONDON, S.W.

Telephone: Battersea, 1900.

Telegrams: "Supplying," London.

A B C Code, 6th Edition.

## AVRO

### PROPELLERS

*of proved efficiency.*

A 35 h.p. Green "Avro" biplane carries passengers with ease for lengthy periods when fitted with the

#### AVRO PROPELLER.

YOUR AEROPLANE WILL GIVE EQUALLY GOOD RESULTS IF YOU FIT IT WITH AN

#### AVRO PROPELLER.

**A. V. ROE & CO.**

The Aviators' Storehouse,  
Brownsfield Mills, MANCHESTER.

*We make a speciality of Oxy-Acetylene Welding.*

... THE ...

## Beney Propeller.

SIZES FOR STANDARD  
MACHINES KEPT IN STOCK.

*Particulars and Prices from—*

**ROBERT BENEY & CO.,**

7, CARLISLE STREET, W.

THE NEW TYPE B

## VALKYRIE

### MONOPLANE

HAS NOW BEEN TESTED AND HAS  
PROVED AN UNQUALIFIED SUCCESS

**Especially designed for Military Service.**

THREE TYPES: 40-80 miles an hour.

**From £280.**

ALL THREE TYPES FLYING DAILY AT HENDON.  
*Tuition Free to Purchasers. Particulars on request.*

## THE AERONAUTICAL SYNDICATE

Established March, 1909,

LTD.,

At the Flying Ground, Collindale Avenue,  
West Hendon, N.W. (<sup>6 miles from the</sup> West End.)

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

# E. T. WILLOWS · L<sup>TD</sup>

## AERONAUTICAL ENGINEERS

### SPECIALITY: WILLOWS' DIRIGIBLES

4-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



**SECOND-HAND BAND-SAW**, splendid condition, Tilting Table, Fences, etc., for hand or power. £5. —MALLOWS & Co., Adelphi House, Strand, W.C.

**60-80 H.P. E.N.V. ENGINE.** Absolutely new. What offers?—A.M., 58, Brocklehurst Street, New Cross, S.E.

**50 H.P. ALVASTON ENGINE**, perfect condition, fresh from makers'. Replacing by more powerful type. £50 for quick sale.—MALLOWS & Co., Adelphi House, Strand, W.C.

**TUITION.—£50.** Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. See news columns. More certificates have been secured on the Avro than on any other "All-British" Aeroplane.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**WANTED**, Certificated Pilot Aviator as instructor Blériot and Farman. Salary and 50% all earnings. 3 months' certain engagement. State lowest terms and full particulars. SCHOOL, c/o AEROPLANE.

**FOR SALE**, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**VOLUNTARY HELP.**—Gentlemanly youth (19), late sec. to well-known Aero Club, is willing to give spare-time services to private aviator-experimenter or firm. Good knowledge of construction and woodwork, and is willing to learn. Must be within easy distance of London. Apply Box 327, AEROPLANE.

**TO BROOKLANDS' AVIATORS.**—Young man offers volunteer assistance. Already had some experience. Write:—"VOLUNTEER" c/o THE AEROPLANE.

**ELSWICK AUTOCARS LIMITED, FAG'S CORNER, BEDFORD.**—For sale as a going concern the above business, including complete Wood working machinery, Patents, Drawings, Plans, Patterns, Templates, also useful Plant for the manufacture of Aeroplanes, Motors, consisting of Tangye Gas Engine, Lathes, Drills, Planing Machines, Band Saw, Stocks and Dies, various Tools, Furniture, etc. (useful stock), and 6 Aeroplanes in course of construction. Works specially adapted for carrying on the business. Further particulars on application. Can be viewed at any time on application to Greenup, Snell & Co., Solicitors, 1 and 2, George Street, Mansion House, E.C., Firth & Co., 77, Chancery Lane, E.C.; or the Liquidator, S.B. Saunders, King's Walk, Nottingham.

**LANARK AERODROME, Lanark, N.B.**—Tuition by Certificated Aviator on genuine Blériot Monoplanes: Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

**BARRHEAD FLYING SCHOOL.** Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

**PROPELLERS.**—"Avro" Propellers of proven efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**MACHINES.**—"Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**BLERIOT** cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

**CERTIFICATED PILOT-AVIATOR**—experience of six types—desires any opportunity for amateur flying, experimental or standard machines. —"AMPHIBIAN," c/o THE AEROPLANE.

**"MANN" MONOPLANES.**—World's Records. Distance 2,535 feet. Duration 82 secs. Now on the market at 15/-. Do not buy inferior cheap machines, which may or may not fly, but invest in a real flyer, which has been awarded ten first prizes in open events. Every machine sent out guaranteed personally tested by Mr. R. F. Mann, and to have flown quarter of mile in 60 sec. Write for particulars to WILLIS BROS., 60, Cambridge Road, Hastings, Sole manufacturers for Great Britain.

**CHAUVIÈRE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD and PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

## CLIFT AERO MAPS

Used in the "CIRCUIT OF BRITAIN" and all Cross-country flights.

Clift Maps were used by Vidart, Kimmerling, Valentine and others in the European Circuit, and by the majority of flyers in British Circuit.

## Clift Aero Compasses

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators. Necessities for the

"CIRCUIT of ANYWHERE"

For terms, write—

**Eric Clift**, c/o "The Aeroplane," 166, Piccadilly, W.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

THURSDAY, AUGUST 10th, 1911

No. 10.

## LEARN TO FLY AT THE "BRISTOL" FLYING SCHOOLS

AT

SALISBURY PLAIN

AND

BROOKLANDS

The equipment is ideal, consisting of  
"BRISTOL" Biplanes fitted with  
Gnome Engines, and is so complete that

THERE IS NO WAITING  
— FOR MACHINES —

:: in the event of a smash. ::

Twenty-five  
per cent.  
of  
England's  
Certified  
Aviators  
are  
"BRISTOL"  
Pupils.

One  
"BRISTOL"  
pupil  
gained  
his  
Brevet  
after only  
three  
Flights.

The Tuition is in the hands of a number  
of the most skilled Aviators of the day

so that

RAPID PROGRESS

is fully ensured.

SPECIAL TERMS TO NAVY & ARMY OFFICERS

Full particulars from . . .

The British & Colonial Aeroplane Co., Ltd.,

Telegrams:  
"Aviation" Bristol

BRISTOL, Eng.

Telephones:—2 P.O.  
74 National  
3074 "

"THE AEROPLANE," AUGUST 17, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

THURSDAY, AUGUST 17th, 1911.

No. 11

Rest after Labour.

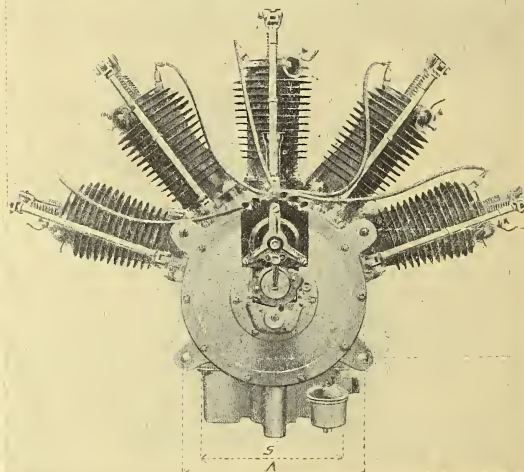
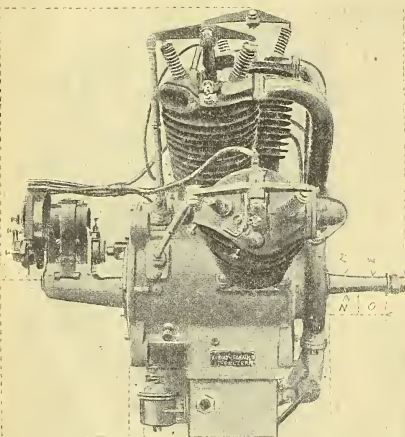


After the "Circuit" the successful foreign competitors were "benefited" at Hendon, fêted at the Savoy, and banqueted at the Crystal Palace. Above are shown the two British competitors who completed the course without backing or organisation. They are having tea at the "Blue Bird" at their own expense.

SMITHSONIAN INSTITUTION OCT 27 1959



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

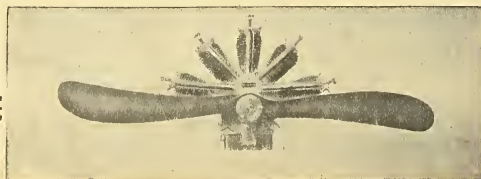
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL ... ..	243
AIR CURRENTS ... ..	248
STARTING AND LANDING ... ..	250
THE WAR OFFICE AGAIN ... ..	252
"PLAIN" TALES ... ..	252

	PAGE
THE WEEK'S WORK... ..	253
THE NIEUPORT TWO-SEATER ... ..	256
ANOTHER AERIAL LOG ... ..	258
CORRESPONDENCE ... ..	259
THE VISITORS' LIST ... ..	262

## Editorial Opinions.

**The Wily Promoter.**

As was only to be expected, after the little boom aviation has recently received, we are threatened with quite a number of prospectuses of companies which hope to acquire money from the public, ostensibly to finance the building of machines or the running of aviation grounds.

Now there are undoubtedly at the present moment quite a large number of firms with thoroughly well tried machines, who only need a few thousand pounds capital to aid in their development to make them really paying concerns on quite a respectable scale. In fact, several of them can show, if not a large profit, at any rate, a payable business for the last year.

Unfortunately, however, it is not firms of this kind on which the company promoter concentrates his energies. He generally likes to have something more than mere prospects of a reasonable dividend to talk about, and he, therefore, is apt to prefer a prospectus which sets forth in glowing terms the world-shaking possibilities of some utterly untried machine, possessing entirely supposititious qualities of automatic stability, which it is hoped will make it a suitable vehicle for patients whose physicians have advised them to indulge in a long rest cure.

Generally the prospectus includes the name of some individual of aristocratic origin, and, if possible, the name of some other individual of considerable scientific attainment, if one may judge by the letters after his name, though there is no guarantee that the said scientific attainments have any relation to the science of aviation, or, that if they have, they are of any practical value. Retired army officers are also largely used by these financial fishermen as "ground bait," though, as a rule, the senior Army officer is the last person in the world who has any knowledge of aeroplanes or finance, or any natural ability to acquire that knowledge. It is true that the young officers of to-day are the keenest and most able of aviators, and students of aviatic science; but, unfortunately, the same cannot be said of their seniors.

The writer's advice to those who are thinking about putting money into aviation—and, be it said, money judiciously invested in aviation is likely to prove a veritable gold mine, if the investor can afford to wait—is on no account to put money into a company formed with the intention of building machines which have not yet flown considerable distances, both round aerodromes and across country, in the hands of an ordinary certificated aviator.

Companies which base their claim to public money on the performances of models only, or on the possession of untried patents, should be avoided at all costs. The names of the directors of proposed companies should be investigated very carefully, for it may be taken pretty well as an axiom that the men whose names appear most in the daily Press in connection with aviation, or as being present at functions where aviators congregate, are the men who know the least about the subject. As a general rule such men have merely got the knack of ingratiating themselves with newspaper reporters so as to bring their names into prominence.

The man who genuinely knows what is what in aviation, and whose information on the possibilities or otherwise of an aeroplane is worth having, is, as a rule, too busy studying the machines wherever he may be to have time to study the reporters.

If any readers of *THE AEROPLANE* should be thinking of investing money in aviation the writer will be only too pleased to give any information he can, strictly in confidence, to anyone interested; and though, of course, he does not profess to be a prophet who can say with certainty that a certain firm will be a great success, he can, at any rate, with a fair show of accuracy, undertake to say what proposed flotations are pretty certain of failure.

**Those Engines Again.**

The letters in last week's *AEROPLANE* concerning engines were of more than usual interest. Mr. Butler has undoubtedly touched upon a point which needs very serious consideration. There is no doubt about it that with proper control of the engine one could get considerably better results.

No automatic carburettor in existence can give such perfect combustion as one which is under proper control, and most motorists will agree when it is stated that a clever driver with full control of the ignition timing, throttle, and extra air inlet all on the steering wheel, will get very much better results, both as regards economy and power, out of his machine than with an automatic carburettor.

Of course, there is the obvious objection that when a man has got to steer in three dimensions instead of two, and has also got to balance the machine, it does not leave him much time to attend to niceties of engine adjustment, and anyone who has experimented with an air control working from the wheel knows how easy it is, having reached the best possible point, to overshoot it ever so little, and so lose power instead of gaining it. The result of

such a mistake at a critical moment on an aeroplane might be disastrous.

Mr. Butler, however, might perhaps be satisfied with a carburetter which could be easily adjustable before the machine left the ground, for an aeroplane engine runs, practically, at a constant speed while flying, and the adjustment which gives the best result at the start would probably do for the rest of the day. The trouble is, however, that most carburetters are uncommonly hard to adjust, and quite a good deal of the trouble during the "Circuit" was caused by the unsuitable, or too rich, mixture of gas referred to by Mr. Butler.

An excellent example of such trouble was seen on Bank Holiday at Brooklands, when Pixton spent most of the afternoon trying to tune up his E.N.V. for the Manville prize. The engine itself was giving plenty of power, but after running somewhere about ten minutes it invariably got hot, and began to lose power. One could see from the way the engine was smoking, and from the soot on the valves, that the whole trouble was too rich a mixture; but, although the carburetter was taken to pieces, the jet reduced to its smallest dimensions, and as much air given to it as possible, the mixture still remained too rich.

In cool weather this trouble did not occur, simply because it was possible to keep the engine cool; but, all the same, the engine must have been getting too rich a mixture the whole time, unless, of course, which seemed likely, a slight leak had developed recently round the jet.

Even if this were so it seems that quite likely with a delicately adjustable extra air inlet it might have been possible to put matters right, for extra air taken in above the jet would mean less suck, and so less petrol, from the jet itself.

Mr. Astley's letter is unusually valuable, because not only is he himself one of our very best fliers, but, so far as the writer can recollect, this is his first appearance in print, on the subject of aviation, at any rate, a fact which would seem to indicate that he feels very strongly on the subject of rotary engines.

It is to be feared that Mr. Astley rather misses the point about "picked engines." As he very rightly says, it is not likely that anybody would set forth on such a big race without carefully tuning his engine beforehand, and certainly everybody

would pick their engines if they had a chance. That is exactly the point. If an engine be what an engine ought to be, the difference between the very best engine of that make and the very worst should be so small that it should not be worth while going to the trouble of picking any one particular engine, and anyone of those engines should be capable of putting up the same performance as any of the others, provided they were all reasonably well looked after.

Moreover, it should not be necessary for them to be tuned up to the extent that they are. Naturally, one expects an aeroplane engine to need more looking after than a motor-car engine, just as one expects one's hunter to need more careful feeding, more grooming, and more thorough tuning up than the ordinary carriage horse gets, or even the average hack. Nevertheless, there is a considerable difference between keeping an ordinary hunter in good condition to hunt two days a week and training a Grand National winner, and the writer's point is that apparently in order to get round the "Circuit" it was necessary to tune up on the Grand National principle rather than that of the ordinary hunter.

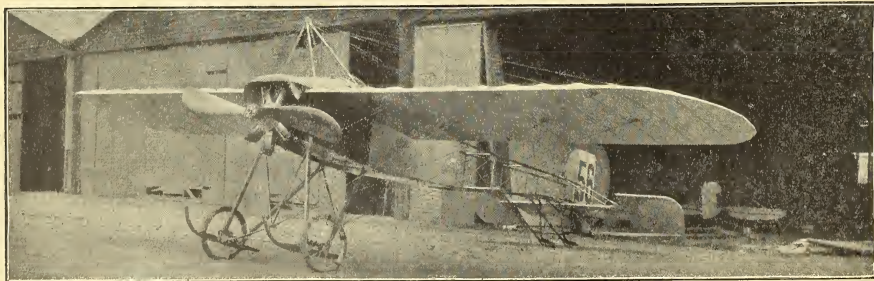
There must be some very considerable difference between one Gnôme engine and another, when it became necessary for Védrières to use an engine so old that it bore the number 3 of the Gnôme series, and Mr. Astley probably knows, as well as anybody else, that certain particular engines such as those which are the personal property of Messrs. Valentine, Hamel, and one or two others, are noticeably better engines than the average.

When one comes to the average rotary engines one sees that it has its troubles much like other engines. Reynolds' carburetter trouble may easily be compared with various cases in which Gnôme engines have overheated through excess of petrol, caused by the pilot keeping his petrol tap open in a way which did not fit that particular engine.

Cody's very slight trouble with overheating was as nothing compared with the overheating which seems to occur to almost every 70 h.p. Gnôme.

Pixton's trouble with his Renault was due to over-lubrication at Hendon, and to a leaky petrol tank just before reaching Harrogate.

There is no doubt that, given their choice, as Mr. Astley suggests, ninety per cent. of aviators would choose Gnômes in preference to any other



The Morane Monoplane used by Mr. O. C. Morison on his Cross-Channel and various other fine flights.

# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz. :

35 h.p.	*60 h.p.	100 h.p.
---------	----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

The E. N. V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESSEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evolosyn," London.

## HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



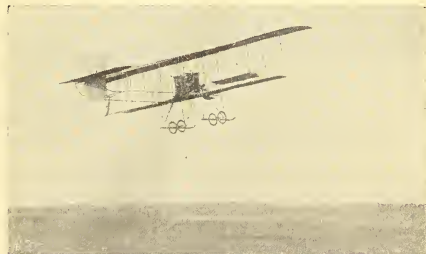
Eight Types

### Monoplanes

From 40 to 80 miles per hour

### Biplanes

From 36 to 50 miles per hour.



Catalogue on Application.

Winner of De Forest Prize



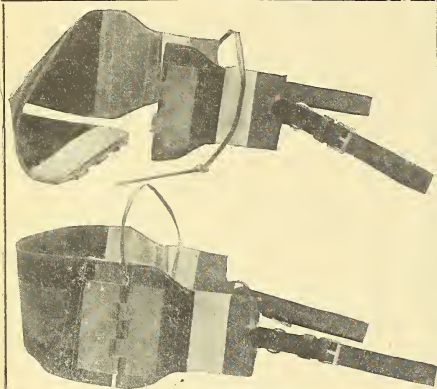
# The Universal Aviation Co., Ltd.,

166 PICCADILLY, W.

Supply Aeroplanes and all Accessories for them

## MONOPLANES OR BIPLANES.

Engines and Propellers.  
Timber, Steel Tube and Fabric.  
Aluminium in Sheet or Castings.  
Petrol and Oil Tanks and all  
other engine fittings.  
Landing Wheels and Skids.



THE "BIRDLING" BELT.

## Aviators' Safety Belts & Helmets

THE BEST AND LATEST  
MAPS & INSTRUMENTS  
FOR CROSS-COUNTRY  
WORK.

Bolts, Nuts, Wires,  
Strainers, Eyebolts,  
etc. Tools of all kinds  
by the best makers.

Telephone: 3407 Mayfair  
Telegrams: "Birdling," London.

WHAT MR. GUSTAV HAMEL THINKS OF IT.



THE ROYAL AERO CLUB  
— OF THE —  
UNITED KINGDOM.  
166, PICCADILLY,  
LONDON, W.

W. 1662 MAYFAIR

To the Universal Aviation Co. Ltd.,  
166 Piccadilly  
July 31<sup>st</sup> 1911

Dear Sirs

You will no doubt be glad  
to hear that your safety belt  
which I used on the Daily Mail  
Incident, was of the greatest service  
to me, and I shall certainly  
never attempt a big cross-country  
without it  
Yrs Truly, G. W. Hamel

engine; but the aviators themselves are, in many cases, not engineers, and would simply buy whatever happens to be the fashion.

The writer is quite prepared to admit that at the present moment the Gnome is at the top of the tree, but the strange thing is that it is apparently impossible to improve it. Otherwise, surely the makers of the engine would have succeeded in doing so, and it would not have been possible for No. 3 engine to be practically the best they have made.

It must be admitted, even by its friends, that the revolving engine, owing to the extra strain put on the cylinders by centrifugal force, and the extra strain put on the fuselage of the aeroplane by gyroscopic force, is not by any means the ideal engine, and there seems little doubt the advantage it gives of an even fly-wheel effect can be more than balanced by the extra propeller efficiency which can be got by gearing down the propeller when used with an engine of the V., or ordinary upright type.

The position actually seems to be that the rotary engine is not improvable, and, that being so, though it may be the engine of to-day, it cannot possibly be the engine of to-morrow.

As regards the final argument in the Editorial Opinions of July 27th, Mr. Astley surely will not argue that the driving of the modern racing aeroplane, as we know it, is much less of a trick than is tight-rope walking. When a machine is by design more or less unstable both laterally and longitudinally, and when it is propelled by an engine which is obviously taking 50 h.p. to do what half the horse-power should do, it cannot be reckoned anything like fit to "fix the type for some years

to come," which is what Lord Northcliffe and *The Daily Mail* claimed that it would do.

It is not a question of "lunatics choosing to risk their necks" by travelling by air, for we shall all be travelling by air before very long, but of designers making machines unnecessarily unstable in the hopes of acquiring extra speed thereby, when they might with equal ease relieve the pilot of a large proportion of his work simply by giving the machine some measure of automatic stability, and by providing him with an engine which will give at least equal reliability with considerably more economy and less interference with the control of the machine.

#### Gnome Engine Repairs.

The writer has recently had the opportunity of examining at a British engineering works a Gnome engine which, in a wholesale smash, received the following injuries:—

(a) Seven cylinders bent, one of them  $\frac{1}{8}$  in. out of truth.

(b) Many radiating fins flattened.

(c) Three pistons broken.

(d) The back-plate twisted out of shape.

(e) The nose bent,  $1\frac{1}{2}$  in. out of truth.

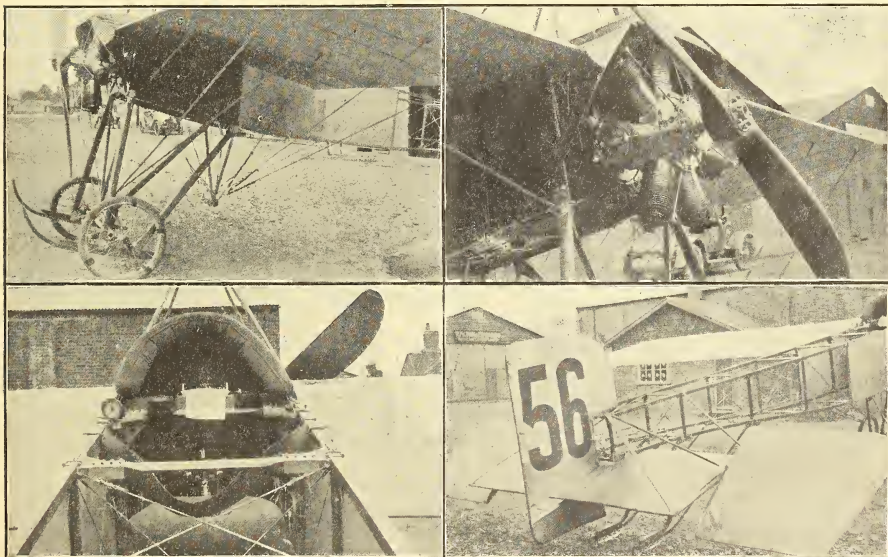
(f) The crank-shaft  $\frac{1}{4}$  in. out.

(g) All connecting rods bent, one  $\frac{1}{4}$  in. out.

(h) All the exhaust valve sets destroyed.

The cylinders and fins have been straightened, three new pistons built, the back-plate, nose, crank-shaft, and connecting rods straightened, and a complete new set of exhaust valves, springs, housings, rockers, and pull-rods built.

Considering the special work in the Gnome engine, this is a really splendid achievement. It is not yet permissible to give any further particulars, but in a few days, when the tests have been completed, further information will be given, as it will be of immense advantage to British users of Gnome engines if they can get their damaged engines repaired quickly in this country without having to wait till the people in France choose to deliver.



MORANE DETAILS: 1. The chassis. 2. The engine mounting and housing. 3. The pilot's seat, showing back-strap, map, clock, and padded back to dashboard. 4. Rudder, tail, elevators and skids.

## AIR CURRENTS.

## AERODROME TYPES.

## No. 3.—The American.

She generally alludes to having "done" things. She certainly "does" you.

The "doing" of London takes anything from three days to three weeks, according to the length of time she has for her "i-tiner-ary," and the "doing" of an aerodrome anything from three minutes to three hours, following the same restrictions.

She looks as though she had been turned out of a band-box, there is not even an eighth of an inch of a hair out of place, and her accent is a dangerous thing on flying grounds—it is liable to disturb the air and create gusts and eddies.

She comes either *en famille* or at least with some of her compatriots, or with some long-suffering English person who, after several days of her, is beginning to think a desert island would be a good equivalent for paradise.

She has an exceedingly successful method of eluding you at critical moments and appearing in the distance chasing some machine which is being wheeled out preparatory to making a flight. I have seen her pursuing a Blériot while the French mechanics were reduced to a state of incoherent imbecility owing to her calm indifference to their commands to go back.

"The man wants to fly," I said, weakly, when she was restored to me by a perspiring official.

"Waal, I guess I know that, an' I just want to get right there and see how he does it."

Collapse of me under the stern eye of the official, which said all too plainly: "Why don't you look after her?"

One cannot help thinking that a regiment of soldiers would be totally inadequate to keep her in any place where she didn't want to be.

Her attitude towards the flying is mildly sarcastic. "I calculate Glen Curtiss could put *that* man to sleep *every* time," says she, scornfully.

Ordinary straightforward flying has no charms for her, and the most hairbreadth *vol plané* leaves her cold, but if an aviator were suddenly to skim over the sheds and lift the roofs with a crowbar à la tent-pegging, she would probably call it "a real cute thing."

She asks you frantically for the name of every man hovering near a machine, and jots down in a pocketbook those who are "slap-up" aviators. "Guess they'll ask me over the other side if I've seen all the men, and I'll know right away if I refer in here."

An Englishman once remarked that the Americans eat what they can, and can what they can't! Possibly the fair she stores her mind on the same principle.

Having invaded every shed and been politely but firmly shown out of most of them by weary owners and mechanics in the last stages of collapse, she begins to think it time she were hustling, and hustle she accordingly does.

She may be an excellent tonic, but for the hot summer days in which she usually invades us we should, most of us, prefer her to be a little more diluted.

We will have her on loan gladly, but the other side may have her for keeps, with the rights of ownership entirely undisputed.

D. M. H.

Sincere condolences to Mr. O. C. Morison, who has recently suffered the rigours of the law for exceeding the motor speed limit so long ago as May 10th last. An officer who gave evidence said that "the summons was served only with great difficulty. Mr. Morison was an aviator, and the only chance they had of finding him was when he was motoring to or from Brooklands"—the remainder of his waking moments, it would seem, being spent exclusively in mid-air, out of range.

Of course, the really sporting thing, in such a case, would be for the myrmidon of the law to disguise himself in a red wig and blue spectacles, go down to Brooklands, and learn to fly. When proficient he could charter a 60 m.p.h. racer and soar into the blue empyrean in pursuit of his intended victim. The aviator, whose eagle eye would, of course, have penetrated the disguise, would then lure the unhappy man into the fatal vicinity of the sewage farm—and the faithful *remou* would do the rest.

The said *remou*, by the way, is really not so bad when you get to know it. Treated with patience and kind words it becomes quite docile, and will make itself useful in a lot of little ways. It is getting so much attached to Pixton that the other night it followed him nearly half-way back to the sheds. But the statement that it was found next morning curled up under the left wing of his Bristol, fast asleep, is an exaggeration.

M. L. E.

\* \* \* \* \*

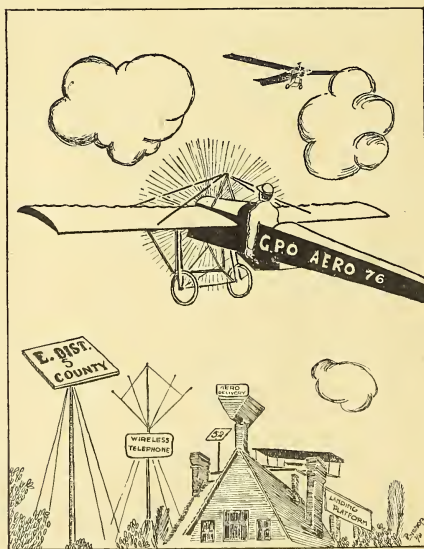
What we may expect to see before long:—

NOTES FROM THE VARIETY THEATRES.

Considerable interest was aroused at a recent matinée at the Middlesex Open-Air Theatre of Varieties by an extra turn (a good many, in fact) given by the rising young aerial artist, Mr. Turnham Green, and his infant phenomenon, the "Tiny Tot." The first part of the display commenced modestly enough by a simple but finished performance of the Dutch Roll, occupying one complete circuit of the aerodrome, followed by the Inside and Outside Edge, some prettily-executed figures of eight, and the Spread Eagle, and concluded by the aviator cutting his name in the air, first forward and then backward, at a height of 100 ft. precisely. This was followed by a graphic representation of the progress of a car on the Scenic Railway at the White City, the various evolutions being reproduced with marvellous fidelity. Last came a delightful series of imitations of popular artists, notably of Pavlova in "Papillons," the celebrated "Staircase Waltz" from the *Count of Luxembourg*, and *Diavolo Looping the Loop*. The last-named item fairly brought down the house (and very nearly the aviator also), and we understand that arrangements are being made to include the turn in the regular evening programme.—M. L. E.

\* \* \* \* \*

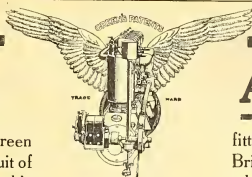
Respected Rotherham Citizen: "Yes, Cody came down here because his waterspout was leaking and he was getting wet!" The same R.R.C., describing the first flight he had seen (Lieut. Reynolds') said: "It looked very nice over our house. We could see where it was, but the air hid it!" B. C.



When—if ever—we have an enlightened Government.



## Green's ALL BRITISH



Why buy foreign engines when the Green fitted to Mr. S. F. Cody's biplane came through Britain Air Race with all parts sealed and intact, and during the flight gave no trouble with its past records—proves that the Green Engine is *unapproachable for Reliability*. Made in two sizes, 30-35 h.p. and 50-60 h.p. Weight, 4 lbs. per h.p. Write for particulars.

## Aero Engines

fitted to Mr. S. F. Cody's biplane came through Britain Air Race with all parts sealed and whatever? This achievement—in conjunction with its past records—proves that the Green Engine is *unapproachable for Reliability*. Made in two sizes, 30-35 h.p. and 50-60 h.p. Weight, 4 lbs. per h.p. Write for particulars.

THE GREEN ENGINE COMPANY (Sole Licensees under the Green's Motor Patents Syndicate, Ltd.) 55, Berners St., Oxford St., London, W.  
MAKERS FOR THE PATENTEES—THE ASTER ENGINEERING CO., LTD. E.H.G.

## Nieuport Monoplanes.

**GORDON-BENNETT CUP, 1911.**

**1st. Weymann on a Nieuport. 3rd. Nieuport on a Nieuport.**

GENERAL AGENT FOR THE BRITISH EMPIRE:—

**MAURICE DUCROCQ, Brooklands Aerodrome, Weybridge, Surrey.**

## Blackburn Monoplanes

**TUITION.**

**EXHIBITION FLIGHTS ARRANGED.**

**Blackburn Aeroplane Co., Balm Rd., Leeds.**

## MULLINER LONG ACRE, LONDON & NORTHAMPTON, LTD.,

*Aeroplane Works:* VARDENS ROAD, CLAPHAM JUNCTION, LONDON

Aeroplanes Built to Clients' own Designs. Best Material and Best Workmanship.  
Clients' Personal Supervision Invited.

**SOLE AGENTS for NORMALE PROPELLERS.**

The most efficient Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race; the European Circuit, and the "Daily Mail" Circuit.

Telephone: 1987 Battersea.

Telegrams: "Aeroeraft" London.

## Starting and Landing.

By P. K. TURNER.

In discussions with many practical aviators on these important points I have found great and vehemently expressed differences of opinion.

In many cases, of course, this is due to the fact that if an aviator flies habitually on one type of machine his method of starting and landing is suited by experience to the design of his chassis. It seems to me that it might really be better to inquire into the principles of rising and landing and then design a chassis to suit them.

The first point about a chassis is that, for rising, at any rate, it must have wheels, and the question arises as to the position of those wheels. They may be placed at, in front of, or behind the centre of gravity. In the Antoinette type are behind, with the result that the machine rolls with its weight on the front skid, which makes steering rather difficult.

If the wheels be at the centre of gravity the machine is easy to wheel about by hand, and also "taxi" very easily. But it must have a long and strong skid in front, as otherwise a rough landing may cause it to turn a somersault, for the weight is high, while the resistance to the wheels is low.

If the wheels be in front of the centre of gravity the machine is not so easy to wheel about, as the weight of the tail and fuselage must be lifted.

In getting off the ground, the first necessity is to attain a speed at which the machine will lift. Machines have now advanced considerably beyond the "fixed flying speed" state. A machine of the present day which, we will say, flies with its tail up at 60 m.p.h., will probably just keep up at 40 m.p.h. or less, its tail then being very low. From this it follows that if a machine be suitably designed it can get off the ground at somewhere about two-thirds of its full flying speed. Therefore, it is obvious that a chassis should be high, so as to get the wings well above the tail. But one must remember that a high chassis of necessity means a more heavily-built and larger affair altogether, and it also means that the machine will take up more room. We thus, as usual, have to compromise.

Having arrived at the fact that to get off the ground at a minimum speed one should have a high chassis and low tail, let us look into the conditions which will enable us to attain the requisite speed in a minimum distance.

This is a matter of the position of the wheels and of the amount of lift on the tail. For the tail-skid offers a resistance while on the ground; this resistance will increase with the load usually lifted by the tail, and also, the farther in front the wheels are, the more load will be taken by the tail-skids; so that for this purpose it is best to have a non-lifting tail, and the chassis wheels almost under the centre of gravity.

The tail will then lift directly the machine starts rolling. So that, for a quick get-off, one should have a high chassis, with the wheels just under the centre of gravity, and a non-lifting tail with a small skid just keeping it clear of the ground.

### As to Landing.

For landing purposes we have somewhat different conditions. First, we must be prepared to take up the first shock of a rough landing, and then, if a good landing be made, the problem is to pull the machine to a standstill in the minimum distance.

Now the actual shock to be absorbed varies (1) as the square of angle of descent; (2) as the weight of the machine; (3) as the square of the speed; (4) as the travel of the shock-absorbers. Therefore, for a machine of given weight we can lessen the landing strain by giving the shock-absorbers a long travel, by diminishing the angle of descent, or by lessening the speed. The pilot, of course, depends on the designer as regards his springs, but both the speed and the angle are the pilot's own affair.

Where there is plenty of room to land, many pilots "flatten out" just before touching the ground, so that they actually make a "tangential" contact, the result being that there is no shock at all except that due to irregularities of the ground. Others—especially those who fly lifting-tail machines—flatten out earlier, and, keeping a few inches off the ground, gradually let the tail drop, the machine getting slower and slower as the angle of the planes increases, and finally "pancaking" or falling the remaining few inches at a very low speed.

Now of these two, both present the difficulty of exactly judging the angle of flight and the distance from the ground. In the first case there is the danger of hitting the ground a trifle too soon, the result being a glancing blow at a high speed. In the second is the risk of "pancaking" too soon or too high, the result being a vertical drop.

In the first case the wheels, or an upturned skid, should be far forward, to prevent a "capote," or forward somersault; in the second, the wheels should be under the centre of gravity, so that the tail does not get a big shock. To suit both sets of conditions, it is advisable to have wheels at, or slightly in front of, the centre of gravity, with a skid projecting in front.

Having safely landed, there comes the question of coming to a standstill. Here, for once and once only, the lifting-tail machine has the advantage, for the heavy weight on the tail-skid soon brings it to rest. On the other hand, the high chassis and low tail cause the planes to form an effective brake, but care is needed, because if the tail be dropped while the machine is running fast there is a possibility of its lifting again, in which case it will probably pancake from ten feet or so, to the detriment of any chassis on earth.

I cannot understand why no one has followed the excellent practice of putting on a sort of drag-brake, acting on the ground—a very easy thing to arrange and fit. The only point is that the brake should be in front of the wheels, to discourage a capote.

Another point of importance is the matter of landing in a side wind. To do this safely, the wheels must "track," i.e., must be so suspended as to follow instantly if the machine land at all sideways.

The net result, then, appears to be that the best starting and landing arrangement is one consisting in an indeterminate number of wheels under, or slightly in advance of, the centre of gravity: a projecting skid or skids in front; a wheel suspension which gives free "tracking"; and the design of the machine should be such that the front planes are high off the ground and the tail as low as possible.

### A BAD LANDING GROUND.



Showing the touching faith which a Brooklands aviator—who shall be nameless—places in a rotary engine, or in the gliding angle of his machine.

# "DEPERDUSSIN"

## MONOPLANES.

"Daily Mail" Circuit.

### The First British Aviator

to complete the Circuit

PRICES  
FROM

£400

UPWARDS.

was

## Valentine

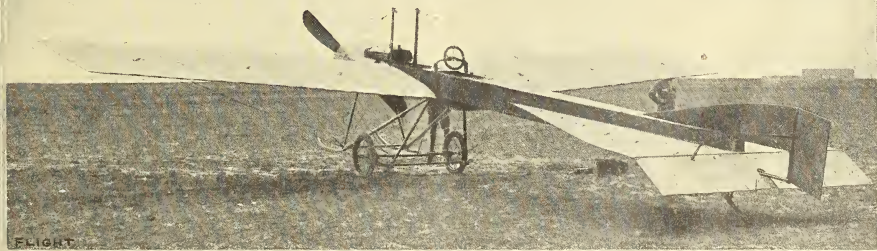
on

PRICES  
FROM

£400

UPWARDS.

### Deperdussin Monoplane.



### Aviation School now open at Brooklands.

SPECIAL TERMS TO ARMY AND NAVY OFFICERS.

*For full Particulars apply to*

### The British Deperdussin Aeroplane Syn., Ltd.,

30, REGENT ST., PICCADILLY CIRCUS,

Telephone—280 Gerrard.

LONDON, S.W.

Telegrams—"Santochimo, London."



### The War Office Again.

Once more the War Office has distinguished itself by its ineptitude, in this case complicated by a deliberate breach of good faith. A young officer of my acquaintance recently wished to join the Balloon Section—before the Air Battalion was formed. He was told that the possession of his aviator's ticket would ensure his acceptance, so he forthwith spent something over £100 and a month of his leave in getting his certificate.

Having got it he again applied—this time *after* the formation of the Air Battalion—and was told that the War Office could not grant him engineer's pay. At the same time he was told by the officer commanding the Air Battalion that the sooner he could join the better. He replied to the War Office that he was content to remain on his regimental pay, and hoped he could be gazetted at once. The reply he got—from another department—was an impolite request to know what he meant by applying without his colonel's permission. Off he went to his colonel, and promptly sent in another official application. At about the same time he received an intimation from the Air Battalion that they were badly in need of subalterns, especially for the dirigibles.

The final reply of the War Office was that there was no vacancy for him in the Air Battalion, that they could not say when there would be a vacancy—it might be a month, it might be more—and he had better wait and see.

Now what does this mean? We have Colonel Seely's announcement that eighty to a hundred officers are wanted, and that they are to be trained at Government expense in civilian schools. We have already something over a dozen officer-aviators who are not attached to the Air Battalion. If it means anything it means this: that those officers who have got their tickets at their own expense are to be gazetted to the Air Battalion in one lot with the new draft—when it comes through—and that they will have no seniority over the new men. It has also been conveyed to them that, with luck, they may get back about £40 of what they have spent in getting their tickets, and that is all their reward for their personal enterprise.

The reason seems to be that some obsolete old general or other in charge of this business at the War Office still does not believe in aeroplanes, but that in the days of his youth and mental vigour he was once a Sapper, and still retains enough *esprit de corps* to be determined that, if the Government be (according to his view) foolish enough to demand aeroplanes, any extra pay and privileges to be got out of them shall go to the Sappers.

In fact, there seems to be a deliberate attempt somewhere to retain the Air Battalion as a mere branch of the Royal Engineers instead of helping it to become, as it must be some day, a separate service, independent of either the War Office or the Admiralty.

C. G. G.

### "Plain" Tales.

The Salisbury Plain correspondent of THE AEROPLANE writes as follows:—

"THE DAWN OF INTELLIGENCE.—The War Office has agreed to the exchange of the two *Daily Mail* Bristols for two 'Militarys,' and they have agreed to the replacement of one of the Renaults by a Gnome. This glimmer of reason, if carefully nourished, may shortly lead them to buy something up-to-date.

[The War Office insisted on having "Circuit Type" machines, in spite of the Bristol Company's advice that they were not designed for passenger carrying, and were therefore not suited for military work. The War Office, further, still insists on sticking to the front elevator, engine-behind type of machine with a lifting tail, a type which is easy to learn but extremely dangerous in any wind, and quite useless for military work against the 70 and 80 m.p.h. Continental machines. THE AEROPLANE has private information that the Bristol Company have almost completed a light, very fast passenger-carrying biplane with engine in front, and non-lifting tail. This has been designed from the experiences of several of their best pilots, and, in the language of aviation, is "very hot stuff." It is to be hoped that the Air Battalion will soon have several in use. The persistence of the other type can only be ascribed to the incompetence of the Government's technical advisers.—ED. THE AEROPLANE.]

"One Farman, one Bristol, and the two new Bristols, that makes four; the new Gnome adds another, and so they are five; the other Renault has run for quite a long time without missing, and that comes to five and a half. Cammell has ordered a new 70-Gnome for his Blériot—on his own account—and it is likely he won't get it in time, so that makes six.

"A great improvement for the manoeuvre season since last week: birds young and healthy, and very strong on the wing, especially when flying alone. Company seems to make them fly low, and brings them within range of the guns.

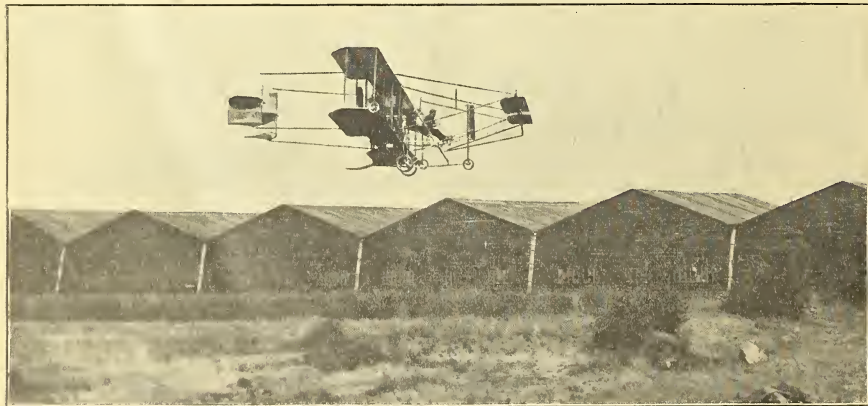
"The weather has not been very favourable during the last week, but every opportunity has been seized and the new machines tested. The last Bristol has not been delivered yet, but will be in the course of a couple of days.

"The Bristol firm have acted in a most sportsmanlike way about the new machines, and the delivery has been extraordinarily quick.

"Departures for Cambridge may begin any time this week, so there will be little news worth recording for some time, perhaps even for the rest of the year, for report has it that No. 2 Company of the Air Battalion will return to Farnborough after the manoeuvres and not fly here till next season. Let us hope the 'glimmer' will have grown by that time."

### The French Way.

A recent list of promotions to the French Legion of Honour include Alfred Leblanc and Hubert Latham, also Captain Bois, the military pilot of dirigibles, and Captain Sacconey, the military kite expert.



Cody competing for the Manville Prize. This was the only British machine to complete the "Circuit," and is about the most stable biplane in existence.

## The Week's Work.

## Monday, August 7th.

BROOKLANDS and HENDON.—Doings reported last week.

BRISTOL.—Graham Gilmour added another fine achievement to his list, flying from Filton to Sherborne, in Dorset, by compass. Leaving Filton 6.25 a.m., he flew in the direction of Sherborne, ascending steadily to 2,700 ft. At this height impossible to see the ground owing to clouds. Journey still further complicated by very gusty wind, which, at such a height, he had hoped to avoid. However, he arrived at Sherborne at 8.15 a.m., covering fifty miles in 1hr. 50m. against the wind.

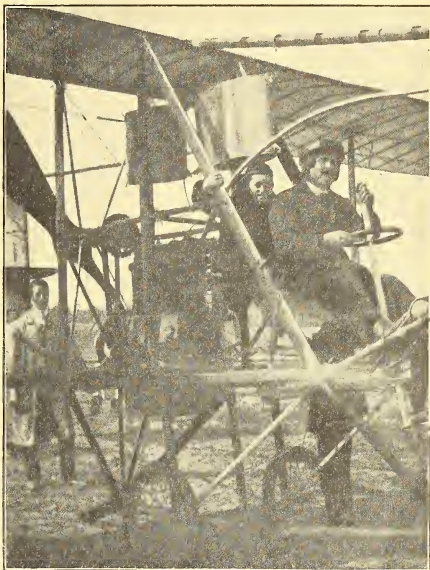
SALISBURY PLAIN.—Bank Holiday a day of activity for Bristol pupils. Throughout morning tuition going briskly. Pitman, new pupil, made two straight line solos; Pizey took out new military machine, No. 38, for a half-hour trial, afterwards handing it over to Air Battalion. Jullerot made short cross-country flight, taking Mr. Pitcher as passenger. Pizey, closely followed by Jullerot, then tuition work resumed. Gibson, Williamson, Stuart, Harrison, Pitcher, and Hoare taken for tuition flights. Pizey took Mr. Pitman's small boy for short circuit. Pitman now within easy reach of brevet, having made a complete circuit, landing in really good fashion. Beals-Wright also making good progress.

EASTCHURCH.—From 11 a.m. throughout the day one or more machines always in air. Watched by a gathering of holidaymakers on the outskirts of the aerodrome. Lieut. Samson, on naval Short, made five trips, each a first-class exhibition. Lieut. Longmore in one flight journeyed by way of Eastchurch and Minster to Sheerness, and round H.M.S. *Actæon* and other ships in the harbour. Average height 1,800 ft. J. L. Travers, on Short biplane, contributed several flights to the day's programme.

## Tuesday, August 8th.

BROOKLANDS.—Noel got his certificate in good form, on the old Avro-Farman, observed by Pashley and Ducrocq, in early morning. So much fog could not see his observers until right on top of them, consequently landing even closer than usual. Longstaffe, Spencer Gray, R.N., and Grahame Wood (of the Polytechnic), the Blondeau-Hewlett pupils, all put in force with Blondeau at dawn.

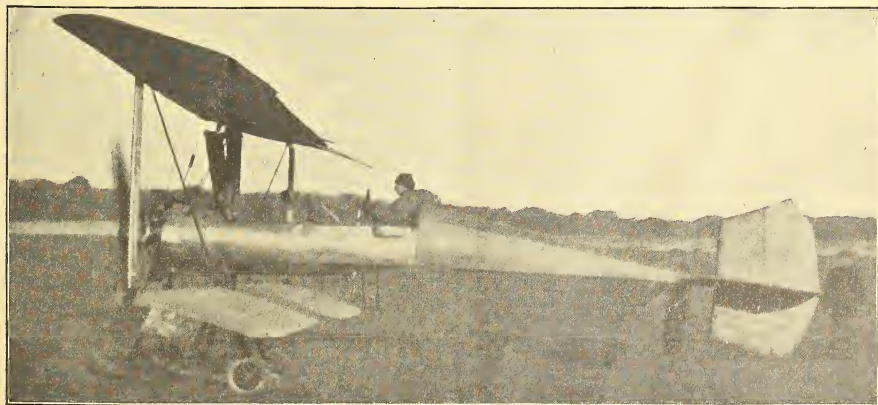
In evening, de Montalent, with mechanic as passenger, put up world's passenger record to 7,100 ft., on the Bréguet, as noted last week. Fine performance. Afterwards adjournment of twelve of the audience in Arthur Turner's good old Gobron to "Hand and Spear" to "*sabier de la champagne*" (as our French confrères put it) to de Montalent, his plucky *mécano*, and M. Brégi, director of the Bréguet firm. Everyone very pleased, for Brégi and de Montalent are deservedly popular and the Bréguet is highly respected.



Cody and his ten-year-old passenger Booth starting for the Manville Pize on Bank Holiday. The boy was visiting Brooklands for the first time with his parents, and Cody took him up because he was the lightest person he could find.

While de Montalent climbed, flock of ordinary biplanes out, Spencer on own make, Raynham on Avro-Farman, and Pixton, with passengers, on Bristol.

SALISBURY PLAIN.—Early morning Bristol staff out, but



The Comte de Montalent on his Bréguet starting out to tune up, preparatory to beating the World's Height Record.



thick mist prevented flying. Mist cleared by strong breeze, which, removing one impediment, effectually took its place.

**EASTCHURCH.**—Lieut. C. R. Samson and J. L. Travers out taking early morning exercise before 7 a.m., both putting in about an hour's work. Later, naval machines again busy, Lieuts. Samson and Longmore putting up good flights.

**HENDON.**—Hamilton, ready for brevet, made good circuits on Blériot at 150 ft., Slack doing straight flights. Later, Hamel up at 7,000 ft. on his racing 50 h.p. Blériot. Also took passengers, including Messrs. Goode and Middleton.

#### Wednesday, August 9th.

**BROOKLANDS.**—At dawn Blondeau out with Longstaffe and Spencer Gray, passengering, twice in fog and once after breakfast; Mrs. Hewlett doing right-hand circles alone. Later, Pixton on Bristol up with Brereton (new pupil, transferred from Salisbury) as passenger, across country Weybridge way. Then took up Davidson, another new pupil, and afterwards two paying passengers. While up with one of them inlet valve went in Gnome, and forced a landing in field beyond railway. Repair made in an hour, and Pixton flew back.

**EASTCHURCH.**—The Hon. Maurice Egerton, Lieuts. Samson and Longmore, and Travers, all on Shorts, taking exercise between 5 and 8 a.m. (Famine in eggs and bacon, etc., predicted at Eastchurch if this habit continues.) Two machines over the village in quick succession, and Eastchurchites, awakened from slumbers, wondered vaguely whether war had been declared, and they were being honoured by a visit from our friends the enemy. Mr. Egerton, flying close upon two hours, made right across island and out over North Sea for considerable distance. Lieut. Samson and J. L. Travers, both remaining aloft well over the hour, went over Eimley, Leysdown, Harty, Teynham, etc., former at 2,000 ft. and latter at about 800 ft. Meanwhile Lieut. Longmore up with a passenger for quite a long tour of the island, returning for breakfast after seventy minutes. In evening, naval men, who never let a chance of flying slip, all busily engaged between 6 and 8.30 p.m. J. L. Travers was also out for several short flights.

Makings of a very nasty accident while Professor Huntingdon doing trials over the dykes. Engine failed, letting him down into dyke. Upper plane of machine still usable. Professor got off lightly, minus a tooth or so.

**HENDON.**—About 5 a.m. Hamilton doing right-hand turns. Abercrombie also up.

#### Thursday, August 10th.

**BROOKLANDS.**—Pixton out doing circuits with Brereton and Davidson early. Much wind rest of day.

**BEAULIEU.**—Drexel out across country in bad wind on old

Blériot. Same machine and same wings as Morane used at Bournemouth a year ago.

**LANARK.**—In evening school Blériot out for first time since smash. Ewen testing adjustments, and later made some short flights. Forson (a pupil) arrived back after a month's holiday, and had some rolling practice.

**HENDON.**—At 4 a.m. Barber out on Valkyrie racer preparatory to cross-country flight. Gave Mr. Ingall, of Eastbourne, a short flight at altitude of 300 ft. Afterwards wind increased rapidly and operations suspended. Though unable to do any flying this week, Mr. Copland Perry, of Air Battalion, very busy in works studying construction and assembling of machines.

**EASTCHURCH.**—Lieut. Samson out before 6 a.m. over Minster, Queenborough, and Teynham at about 1,500 ft. J. L. Travers practising. In evening Lieuts. Samson and Gregory were out in a puffly wind between 6 and 8 o'clock.

#### Friday, August 11th.

**BROOKLANDS.**—Mrs. Hewlett up alone on Blondeau-Farman, again doing right-hand turns. Certainly the first woman to do a right-hand turn in England. Spencer Gray, on same machine, doing straight flights for first time. Later in day England did one circuit to test engine, but wind too bad for flying.

**BEAULIEU.**—Drexel up in evening across country, and half-way across Solent to Isle of Wight at 2,000 feet. Going well, and evidently not cured of aviation.

**EASTCHURCH.**—Lieuts. Samson and Gregory on Naval Shorts doing long flights, and the Hon. Maurice Egerton also flying in usual excellent style.

**HENDON.**—Hamilton did several circuits, and Abercrombie straight flights.

#### Saturday, August 12th.

**BROOKLANDS.**—Blondeau-Hewlett School all out at dawn. Spencer Gray again doing straight flights; Mrs. Hewlett doing circuits. Ducrocq out for first time since accident in France, testing old Farman in view of exhibitions at Worlington. Flying as beautifully as ever, but engine not quite at its best so flights short. Spencer also out on own biplane. Pecquet, on Humber, out across country Weybridge way. Pixton, on Bristol, taking each of pupils as passengers. Rest of day wind very bad, gusts jumping straight from 8 to 29 m.p.h. Few people present, and some of those grumbling because no flying. One old man, in own car, denounced lack of performance loudly as "whole thing a perfect humbug." Pointed out strength of wind to him, but only reply was, "I am quite ignorant of these things, but the whole thing is a perfect humbug." Departed in dudgeon, refusing to be comforted.



Pixton on the old No. 7 Bristol putting up "aggregate" time at Brooklands on Bank Holiday in a bad wind. 3



EASTCHURCH.—Lieuts. Samson and Gregory, with J. L. Travers, out before 6 a.m. Fortunate to get in good flights before breakfast, for afterwards wind rose considerably, and with heat throughout the day made atmosphere very tricky.

Another accident (unusual at Eastchurch). Strange smash-up of Dunne monoplane; pancaked from about 40 feet. Much disassembling into component parts, without damage to pilot.

#### Sunday, August 13th.

BROOKLANDS.—Perfect flying weather from 5 a.m. till 7 a.m. Puffy wind earlier, and half a gale later. By 5 a.m. ten machines out together, pretty nearly a record for English aerodromes. De Montalent, on Bréguet, tuning up for more height, or for flight to France, taking up passengers. Johnstone, on Howard Wright-E.N.V., took up two passengers, and spent rest of day taking out engine, which is going to works to have all-British parts fitted, preparatory to attempts on Michelin Cup. Spencer Gray, for third time alone on Blondeau biplane, doing figures of eight, and Mrs. Hewlett on same machine also doing circuits alone. Fisher, on the Flanders monoplane, with 60-h.p. Green, flying circuits, and doing straight flights with 13-stone passenger. Perquet, on Humber monoplane, out across country. Ducrocq, on biplane, doing circuits with passenger. Pixton, on Bristol biplane, taking pupils up. England, on Gilmour's nickel-plated Bristol, started for Salisbury, after a few circuits, *en route* for Ventnor. Percival out on the Billing "Cozeley Bird," and Noel out on the engine-behind Avro biplane. Nothing doing after 8 a.m. till about 7 p.m., when Pixton came out on the old military Bristol in a nasty gusty wind, flying well, and taking a passenger on one flight. Just before dark Spencer Gray doing left and right circuits on Blondeau biplane in very good style, endeavouring to squeeze his tuition and certificate flights into the last week of his leave.

EASTCHURCH.—Only one out, Travers, on Frank McClean's Naval Short, doing well in nasty wind. Naval aviators not allowed out on Sundays for fear they might acquire too much experience. Quaint ideas of national duty our Admiralty possesses, to be sure!

#### Work at Lanark.

The staff of the Lanark School of Flying received a pleasant surprise on the 31st, when S. F. Cody landed on the aerodrome from Paisley at 4.58 a.m., having taken 50 mins. to do it.

Mr. W. H. Even, the principal of the school, who was away on business at the time, motored over from Glasgow and had an interview with the aviator. At 5.57 p.m. he left for Carlisle, amid loud applause from a large crowd.

On Friday next Mr. Even has been engaged to give an

exhibition flight at Kirkcaldy on the estate of Mr. Munro Ferguson, M.P. A Deperdussin monoplane will be used for this exhibition. The week following he is booked to give flights daily for the week at the Marine Gardens at Portobello, near Edinburgh; the Deperdussin is to be used for these flights also. A movement is on foot to organise a small flying meeting at Lanark if the Merchants' Association or any local body are willing to offer prizes.

W. O. WALSH.

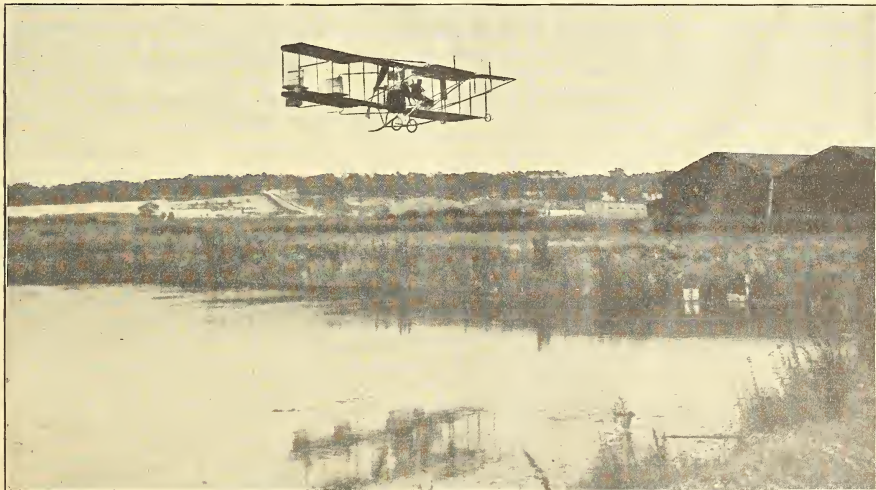
#### Across the Channel Again.

Radley's flight across the Channel on Sunday, the 13th, from Calais to Folkestone is certainly one of the finest things in the way of flying that has been done for some time. He brought a new Blériot and had his own Gnome put into it.

To avoid the trouble of shipping the machine, he had it sent by rail to Calais, where it arrived at 3 p.m. It was taken out of the truck, carted to Les Barraques, the wings fitted, and at 7.5 p.m. the machine left the ground for the first time. At 7.56 p.m. Radley was flying over Dover.

The whole way across the Channel he was worried by a strong easterly wind, which drifted him off his course, and when he approached Dover he found that the Dover Light was a long way to his right. He was then at a height of some 5,000 ft., and, finding the wind worse on the English side of the Channel, he started down for Folkestone, coming down from 5,000 ft. over Dover to 800 over Folkestone Harbour, the seven miles taking four minutes to cover. On arriving at Folkestone he made a right-hand turn over Shorncliffe Barracks, and landed head to wind just outside, rolling barely twenty yards after touching ground.

Radley is, very rightly, thoroughly disgusted with the way things are managed in this country. At Les Barraques, where he was started off by O. C. Morison and his friend Moorhouse, one gendarme and two soldiers kept the whole crowd in order. At Folkestone, as soon as he landed, several hundred men of the garrison, including several officers, came out to see the machine, and not one of them would give a hand to protect the machine from a crowd of about 2,000 people which assembled round it and proceeded, as is the habit of English crowds, to sit on the tail, write their names on the planes, and generally be a nuisance. Radley appealed to a couple of officers to allow their men to guard the machine, and was superciliously told that if he did not like it he had better fly somewhere else, where he would not be crowded. Finally a sporting little corporal volunteered to guard the machine with a few of his friends if the commanding officer would permit. Radley then went up to the Barracks and got the necessary permission, so his machine was guarded all night by the corporal and one or two Tommies.



Cody and his boy passenger at Brooklands on Bank Holiday.—Note the terrific warp on the separate front elevators.

## The Nieuport Two-Seater.

As a flying machine, the Nieuport is, I think, generally admitted to be a considerable step forward. As an engineering job it also appears to be more than usually good.

The wings are set noticeably below the top of the fuselage, and are placed so that the thrust is about on a level with the centre of pressure. Their camber approximates to the old "Phillips Entry," as does that of the other two or three extraordinarily efficient machines existing. They are set at a very slight dihedral, somewhere about 1 in 20. The under stays are of heavy stranded cable, the upper being of piano wire.

There seem to me to be two weak points in the staying, firstly in the fact that the front spar is strained up so tightly that the wires sing on a soprano note, secondly that the compensating or upper warp wires, although they are of solid piano wire, are passed through a curved tube on the *cabane*, and so are being continually bent and straightened.

Another point which might perhaps cause trouble is the fact that when the plane is warped the rear spar is bent instead of being pivoted on the fuselage.

The body of the machine is designed throughout to avoid head resistance. It is very deep and wide, and is very carefully shaped off so as to give easy lines.

The whole of the engine cowl comes off in 10 secs. in a most ingenious manner, while the fuselage itself is so big that, if necessary, a mechanic can easily get to the carburettor, etc., by crawling forward from the pilot's seat. This seat is very deep-set, so that, with the aid of the small cowl in front of the cockpit, the pilot is especially well protected against weather.

The *cabane* is very strong, and is directly above him, so

that in case of a *capote*, he is very safe. The passenger seat is close behind.

As will have been seen from the various published photographs of the machine, the empennage, which is semi-elliptical in section, is placed on top of the fuselage instead of centrally. It is this which gives the machine its curious cocktail appearance.

The chassis is distinguished chiefly for its simplicity and comparative absence of head resistance. It consists of a central skid of round steel tube, with steel tube struts. The axle is simply a laminated steel spring. This might, I think, be made rather stiffer, for the machine at present is somewhat "wobbly" sideways when on the ground.

There is no tail-skid, the rear end of the main skid fulfilling this object. Owing to this, and to the lowness of the machine as a whole, it is impossible to get the tail much below the wings, the result being that the machine rises at much the same angle as that at which she stands on the ground instead of running along tail up and then jumping into the air.

The power plant of the two-seater consists of a 50-Gnome engine with a K.F. propeller.

The control must probably appear rather strange to users of other machines. It consists of a universal lever, which works the elevator in the usual manner, and also the rudder, and of a footbar which works the warp. This seems to work slightly stiff (due to the springing of the rear spar), but the method of connection is excellent; the footbar is keyed to a diagonal shaft, the other end of which works in a bearing attached to the rear end of the skid, and has a crank to which the warp wires are attached.

P. K. T.

### The New School at Brooklands.

We seem to be within measurable distance of that £300 aeroplane, for the Deperdussin people are now putting a monoplane on the market for £400. Of course, this does not include a Gnome engine, but, as the readers of THE AEROPLANE are doubtless aware, there are other engines besides rotary engines, and some of them cost very much less money. Just at present one can scarcely expect a £400 machine to fly as fast or as far as a £1,000 one, but still for £400 the Deperdussin ought to be able to provide quite a large amount of fun for the man who does not want to enter for the big competitions.

By the time these notes appear the school at Brooklands ought to be in full swing, with Gordon Bell in charge, for quite a number of pupils have already been booked. The management of the school are doing one very sensible thing—they have had the courage to import a school machine which frankly and honestly is not intended to fly. As a matter of fact, probably very carefully tuned up, in the hands of an expert it would fly all right; but it is an old machine with a three-cylinder Anzani engine, and is only intended for rolling practice and for straight flights. It has got a span considerably greater than the racing machine, a non-lifting tail, and a healthy dihedral on the wings, so altogether it ought to be about as safe a machine to learn on as one could wish; and besides this machine there will be a six-cylinder Anzani, which is capable of making really long flights, and before many days are over there should also be a big two-seater passenger-carrying machine.

The pupils will have trips in the passenger machine to get them used to leaving the ground, and then they will be allowed to make straight flights on the little Anzani. When they are behaving satisfactorily on that they will have the six-cylinder Anzani on which to do turns and take their tickets. This is really a scientific organisation for a school, and it ought to work extremely well.

### A New British Monoplane.

A correspondent at Salisbury gives a very good account of the trial performances of the new Bristol monoplane, which is practically a reconstruction of the one Prier smashed up at the start of the "Circuit," except that certain alterations have been made in the wings. The machine is reported as being considerably faster than either of the winning machines in the "Circuit," although it has a bigger span, and it is extremely quick on the controls, which is a distinct advantage in the hands of an expert flier, though it is quite easy to "damp down" the controls a bit for the use of those who are not quite so clever with their hands. If it fulfils its promise

under tests, the machine ought to be able to put up a good show in some of the big International tests, such as the Michelin Cup, which still remain to be flown. Experiments are to be continued with it preparatory to settling the type for a number of fast Bristol monoplanes.

### Tanks.

About the most dangerous small defect in an aeroplane is a leaky petrol-tank, and even a leaky oil-tank may lose a valuable prize for an aviator or cause a "discontinuation" in a dangerous place. It is, therefore, well to know where the best possible tanks are made. THE AEROPLANE can vouch for the quality of the tanks turned out by Mr. Davison, of Camden Town, for he has specialised on tanks since the early days of motor cycles, when a tank had to be extraordinarily good to stand the vibration. He is particularly good on tanks of awkward shapes, and one can always rely on his method of fixing tanks "staying put," as the Americans say.

But the tanks are not his only work, by any means. The writer has recently seen a very neat three-way petrol-tap of his make, by which, when the motor begins to misfire owing to lack of petrol, a third port is opened which is placed a lower than the main pipe, and so drains the last drop out of the tank, the preliminary misfire thus acting as a warning that it is time to come down for more petrol.

Mr. Davison is also making some very neat petrol and oil gauges, and a variety of neat metal fittings for pipe-work, all of which should be investigated by anyone who realises the vital importance of having the best possible material and work in the fuel and oil supply.

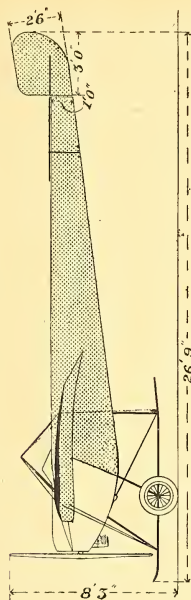
### On the Way to Ventnor.

The Ventnor exhibitions started with bad luck. On Monday Gordon England, flying to the Isle of Wight on his Bristol, ran short of petrol, came down in the island, smashed his machine, and hurt himself.

On Tuesday morning Morison started from Folkestone on Radley's new Blériot. Engine stopped just over edge of cliff, and Morison came down in sea two miles out. Was towed back after floating peacefully for half an hour, but weight of water broke the wings on reaching land. Anyhow, it is something to know that a Blériot will float, for no one has tried it before.

Pizey reached the island on Monday and smashed his Bristol landing at Ventnor on Tuesday morning.

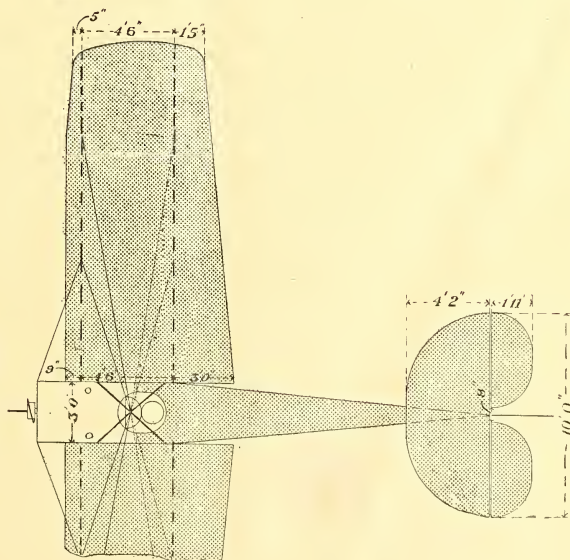
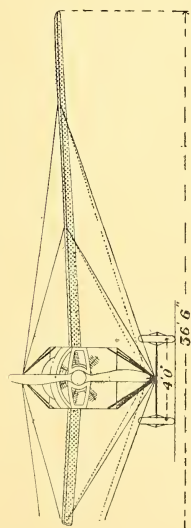
Valentine was the only lucky one. He left Brooklands at about 7 a.m. on Tuesday with a 20 m.p.h. wind behind, and got to Ventnor in not much over an hour.



## NIEUPORT MONOPLANE

<i>Surface of Main Planes</i>	240 sq ft
<i>Empennage</i>	54
<i>Elevators</i>	9
<i>Rudder</i>	7

*Weight (without Pilot) 600 lbs.; Speed, 65 mph*  
*Engine, Gnome, 50 HP, 1100 rpm*  
*Propeller, Rigby, 70" diam. x 6' 3" pitch*





## Another Aerial Log.

The following cheery letter arrived on Tuesday from Graham Gilmour, after his tour on his Bristol biplane:—

"Dear Grey,—Herewith I enclose map I made myself the night before going from Bristol to Sherborne via Martock and Yeovil. Made out of lid of boot-box, typewriting paper (traced from map), paper fasteners, letter band fasteners, and stamp paper to keep edges from blowing up.

"All pencil marks are notes made, while in flight, from various instruments. [To permit of reproduction, the pencil lines have been dotted in ink.—Ed.] Arrow shows wind direction, compass reading, at particular points. Of course, machine was what I call 'crabbing,' i.e., travelling sideways on account of the wind.

"I was, on this occasion, over clouds for the first time, and had to rely entirely on my instruments, compass and height recorder—most important. I was in the clouds for about 40 minutes over and near the Mendips. That's why I got up so high. I knew the Mendips were 1,000 feet in places. I just about touched 3,000, by my big Negretti and Zambra, which is awfully good, steady, and easy to read.

"The committee at Sherborne exhibition show worried me quite a lot to fly when it was too windy, and said finally, after I had been doing flying for about half an hour at one stretch: 'We don't think we have had enough flying, etc., etc.' Exhibition flying isn't all beer and skittles. I got annoyed in the end and shut up shop altogether.

"Tuesday I did a small flight for exhibition at Yeovil. People very enthusiastic.

"Then went to Martock, where I was going to give a show on Thursday. Morison was coming down to help me, but broke his machine on way down from Huntingdon.

"As there is no aerodrome in this part of the world, it had been arranged that, after the Martock Flower and Horse Show had taken £45, which would cover their usual expenses, 80 per cent. of any gate-money over would be handed over to me to build a hangar with at Martock.

"A field has been given for this purpose, rent free, by a Mr. W. Palmer, of Bower Hinton, a fine old sportsman.

"The whole affair on Thursday was a roaring success. Everybody most awfully enthusiastic about flying, and all wanting a shed for aeroplanes to be put in the district.

"About three or four times as many people came to the show as usual, and I think we have raised over £15.

"This shed is to be used by anyone who happens to wish to 'put up' while touring in this district by aeroplane. A nominal charge will be made per day, which will be used to keep paintwork and shed in good condition.

"I hope this sort of thing will spread over England, and sheds will be dotted about everywhere after a time.

"Nearest sheds to this one will be Amesbury, 45 miles; Filton, Bristol, 45 miles.

"I took passengers for flights on this last occasion until 9 p.m.: it was dark at 8.20, so I went on by having petrol flares lit. Find it quite easy to land in the dark, and one can see hedges and trees fairly well from up above.

"On Saturday I started for Amesbury with a lady passenger at 6.40 p.m. However, the wind was against us up above, though there wasn't a breath on the ground.

"After looking down the inside of a huge chimney being built at Yeovil for quite five minutes—as machine apparently was standing almost still—I then made a calculation (with my slide rule, you know) that if we went on at our rate of progression we might fetch Amesbury at about 11.45 p.m. 37.2-55. That night. So we landed between Yeovil and Sherborne.

"Early on Sunday morning we restarted for Amesbury. There had been a thunder storm during the night, and fabric was still quite wet and as tight as a drum. This made machine 'lift' splendidly, and we were soon at 1,800 feet, with car and mechanics scudding on down below.

"Suddenly there was a terrific bang from behind which shook the whole machine. I stopped engine instantly, and asked passenger if she could see any wire loose—or what had happened. She replied she could see only one rudder—we were *en vol plané*, so could talk with ease. I then looked round, and saw a wire quite 12 to 14 feet long, and curly, wound round the top near side tail boom. I found there were still two rudders. My passenger couldn't see one, as a main upright spar got in her view.

"We landed successfully in a field and got out, still thinking we were jolly lucky to be alive, as there had been such a shock at 1,850 feet, only to find the strange wire was my engine-revolutions indicator belt (a steel spring belt), which had 'jumped' and got caught in the propeller, knocking two

small lumps out of the propeller during its stretching. It was originally only 15 inches long, and finished up 12 feet long.

"I planned up propeller with my knife, and we restarted again, arriving successfully at Amesbury 25 minutes later.

"I had heard a jingling sound before arriving at Amesbury, and had asked my passenger to see if she could see anything loose. She replied she thought it was the chain on tank (which keeps the cap from going overboard if it comes off) which was rattling. I accepted this explanation and went on, as it sounded like that.

"After the mechanics had examined machine they found two magneto bolts clean out, and the third and last half out, the magneto just dropping off. The teeth of the small pinions were also only just touching.

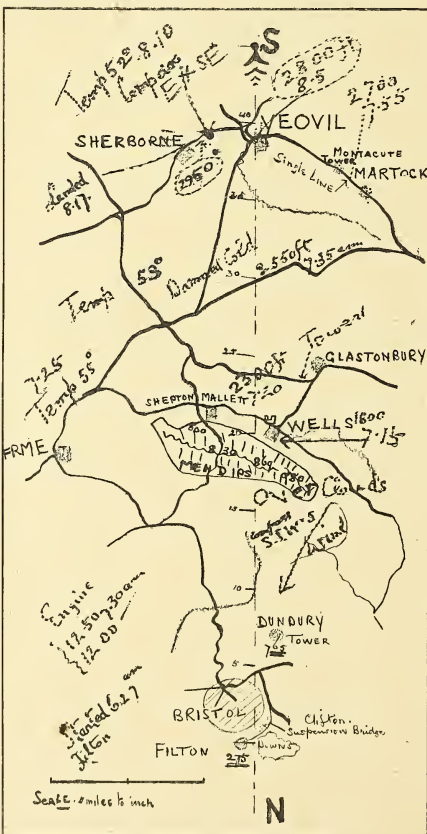
"This is apparently quite a common occurrence with Gnômes. Valentine had this happen to him in the European Circuit. There is no way of locking these set screws. This was what was causing the slight jingle.

"Must stop.

Yours in haste,

"D. G. GILMOUR.

"P.S.—By the way, I forgot to tell you that the prime mover in the whole business of having a shed here, and others dotted about the country like this, is Mrs. Milbank, who arranged everything with the Martock Committee of Sports.



## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

### The Loaded Elevator and the Shifting Weight.

Sir,—I regret to notice in the last issue of your much esteemed paper an extraordinary literary effusion signed "Ventre à terre," the publication of which can only be accounted for by temporary mental aberration on the part of the editorial staff. Speaking as a practical plane pulveriser, I have no hesitation in saying that the only sensible remark made was to the effect that the idea put forward was "possibly erroneous," a very mild description of the proposal to combine two notoriously inefficient devices to obtain an efficient result.

Judging from internal evidence the writer's experience of aviation must be on a par with that of the author of the "leader" in the *Morning Post* of August 9th.

Finally, it is obvious that "Ventre à terre's" premises were false, his deductions illogical, and his conclusions in direct opposition to the truth.

GROSSE-TETE.

### Engine Position.

Sir,—A few days back, whilst imitating the ponderous flight of a fretful albatross, I had an accident, which as well as wrecking my machine has left me with a broken arm, a damaged eye, and a frayed temper.

The results of this accident have impressed on me the dangers of the engine in the ordinary monoplane, and in biplanes with tractor screws.

In the event of an accident the unfortunate engine suffers first, and most severely, of all portions of the machine, whilst the pilot escapes almost without injury.

In the case of the older type of biplane, with the engine behind the pilot, the consequences are different.

Here the engine, after having the shock broken by the main plane, finally comes to rest on the resilient body of the aviator, thus escaping serious injury.

Sir, I appeal to your common sense. 'Cannot something be done?'

The average engine employed in aviation is under present conditions costly, whilst, judging by the conversation in certain inspired circles, aviators are becoming distinctly cheap.

I leave the adjustment of this matter in your hands, confident that you will find a satisfactory solution.

Eastchurch.

W. E. DE B. WHITTAKER.

### Across the Atlantic.

Sir,—Under the above heading, in your issue of August 3rd, occurs an article eminently worthy of a progressive British newspaper.

Apart from the suggestion that a suitable prize be put up for competition, the paramount importance and honour attaching to the successful achievement of such an undertaking renders it imperative that a bold and determined bid be made on behalf of this country to secure therefor the lasting credit of producing this "Columbus of the Air."

A glance at the map reveals two things: First, the distance between Valencia, in Ireland, and St. John's, the capital of Newfoundland, is approximately 2,000 miles. Secondly, it will be seen on plotting a "great circle course" between London and Chicago that such a course, with slight variations, runs via Valencia, St. John's, and Montreal.

Thus we have three great manufacturing centres, in three leading countries linked by a direct line, which traverses also the shortest sea-route.

The importance to this country and Canada of this, probably the future mail-route between the Old and the New Worlds, cannot be over-estimated.

The successful accomplishment of a journey of this magnitude would be a prelude to the establishment of a "Transatlantic Aerial Express Company," with probably branch lines from London to Paris and London to Brussels or Berlin.

After that, the imagination runs riot.

Yet, as your article states, this journey can and will be accomplished in the near future, for it is obvious that the most difficult portion of the route lies between Valencia and St. John's.

Without going into the causes of our past defects or deal-

ing individually with the performances of our aviators, it is a fact to be deplored that there is a tendency at the present time to cater too much to the lighter side of the business, to the exclusion of more solid pioneer work and experiments.

The writer and his companions have been working with the Atlantic project in view for some considerable time, and trust, for the benefit of these islands, that there are many such behind the scenes. They have approaching completion a small, fast biplane, automatically balanced throughout. This machine marks the completion of two years of careful experiments, and, with suitable assistance, we are prepared to commence the construction of a larger craft capable of accomplishing the flight suggested.

I beg to suggest that a flight from London to Chicago, or vice versa, be given consideration. This would give the British, Canadian, and United States people a chance to unite in offering really substantial prizes.

GEORGE DEAN.

### Those Engine Troubles.

Sir,—The *Observer* of the 6th inst. contains an article from the pen of Mr. Charles C. Turner commenting upon the performances of the various engines in the "Circuit of Britain."

Mr. Turner's passion for extolling the virtues and ignoring the faults of all foreign aviation products is as well known as his persistence in emphasising the shortcomings and overlooking the virtues of the products of his own country—we are assuming, of course, that Mr. Turner is British.

In the article referred to, Mr. Turner states that Mr. Cody's "Green" engine gave frequent trouble, and that, with the assistance of two other engines, "provided a distressing tale of woe."

Really, Mr. Turner's information comes as quite a painful surprise to us, Mr. Cody having himself informed us that his engine gave him no trouble at all throughout the circuit, and having expressed himself as being delighted with its regular running.

Mr. Cody, we know, had some trouble with his radiators and tanks, but these are not part of the engine, and are not made by us.

Further, if Mr. Turner must mention the failings, real or fictitious, of British engines, would it not be only fair, and in keeping with his appeal for a "sense of proportion," at least to mention some of their achievements? Has Mr. Turner never heard of what the "Green" engine did in the 1910 Patrick Alexander Competition and in the 1910 British Michelin Cup, of the "E.N.V." in the Baron de Forest Prize, and of the "N.E.C." in Mr. Ogilvie's splendid attempts in the British Michelin Cup and the Gordon-Bennett Cup?

It may be he has not; we regard it as quite possible, in view of the fact that Mr. Turner recently wrote an article deploring the laxity of the British manufacturer, as evidenced by the fact that not a single one had entered for the 1911 Patrick Alexander Competition.

When a gentleman makes a statement of this kind in the face of there being six British entries for the competition referred to, one cannot, after all, but feel sceptical as to the accuracy of his knowledge.

THE GREEN ENGINE COMPANY

(per E. Carrington Hide).

### Flying at Hendon.

Sir,—In reference to your remarks on Mr. Grahame-White's flying on the occasion of Védérines' benefit, I quite agree with all you say, and it is not only on one occasion that it has occurred. I was present on the day of the arrival of the competitors in the European Circuit, and Mr. White's flying on this occasion was positively hair-raising to anyone who understood the danger the spectators were in during the performance, one of his favourite tricks being to fly directly over the crowd at a height of about 15 feet at most. (Probably 15 feet is an under-estimate, as the writer has seldom seen Mr. White closer than 20 feet to his audience.—Ed.) The machine was that unstable creature, the "Baby." He would then swerve out to the centre of the aerodrome, and return full tilt at the crowd again, clearing them by a very small margin. Now I ask is not this "flying in a manner dangerous to the public," and, if so, where is the Royal Aero Club? I am sure that the flight of Mr. Graham Gilmour at Henley, for which he was suspended, was less dangerous, both to himself and the public. But then, of course, Mr. Gilmour is not on the Committee of the R.A.E.C. which deals with this matter of dangerous flying.

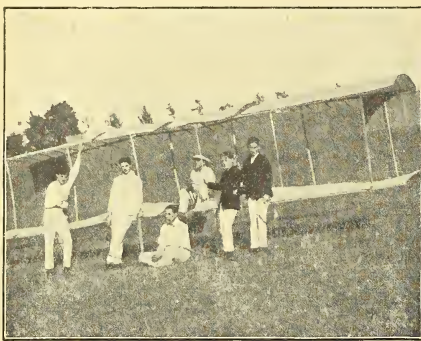
C. L. WILLS.

Merthyr Tydfil.



### Concerning a Glider.

Sir,—Here is a short account of a glider (Type 0.2.1) which I have designed and constructed in its entirety at Charterhouse, and which I claim is the first one successfully flown at a Public School:



I started it in February and finished it about the middle of July. It has a span of 24 ft. width, of main planes 5 ft.; total length 18 ft. It is built in three sections, which can be dismantled entirely in about a quarter of an hour by two people and assembled in one hour. I have only had towed flights at present.

The landing chassis has usually given, but took only five minutes to set right again. I am, however, now going to fix skids only about 18 in. high, and held strongly in place, which I think will do. I am also going to build a monoplane, of which I expect great things.

I have not at present got a rudder on, which, however, does not make any difference. I had one, but it was more trouble than it was worth.

Wishing you every success with your paper,  
Folkestone. G. T. COOPER.

### As to Aerodromes.

Sir,—I read with interest your editorial on aerodromes, as on two days of last week I visited Hendon; on the first day, a Thursday, I had to pay 2s. 6d. to go in and then only saw a few machines, but no flying or rolling, much to my disappointment, as I have not yet seen a machine in the air, although I have been keenly interested in the science of flight for some years. I went again on the Saturday, but again there was no flying. Had your remarks appeared before, I should most certainly have gone to Brooklands, but I had no idea you could get in for 1s.; my 2s. 6d. at Hendon was practically wasted.

HARRY VOSS HALL.

### Mr. Melly's Smash at Manchester.

A Manchester correspondent writes:—After a terrific down-pour of rain which soaked everyone through, including Mr. Melly's Gnome engine, which was not covered over, Mr. Melly decided to make a passenger flight, to the immense delight of the aforementioned drenched spectators, some of whom were becoming slightly impatient, and wishing they had not heard of such things as aeroplanes. Many of them had waited from about 8.30 a.m., first in the scorching sun then in the drenching rain (Oh! this English climate). It was about 2.15 when Mr. Melly's Blériot two-seater was turned round about 20 yards from the crowd, and Mr. Melly and Mr. Werner, of the Manchester Aero Club, climbed into the machine.

The engine was started, and to our surprise the machine moved forward. It ran along at about 20 m.p.h., parallel to the spectators and 20 to 30 yards distant from them. After the machine had travelled for about 30 yards it was seen to rise very sluggishly into the air, and travel 30 to 40 yards at a height of about 10 feet, and then settle down, touch the ground, bounce into the air, and, struck by a gust, the machine heeled over, causing the left wing almost to touch the ground. This tilt was over-corrected, with the result that

the right wing dipped, causing the machine, which had been edging towards the spectators, to swerve towards the right, and so into the spectators.

When Mr. Melly saw what was happening he used all his available power to try and jump the spectators, but too late! The right wing tip, being the lower one, struck the wind-screen of a motor car, smashing both the wing tip and the screen. This caused the aeroplane to do a cart-wheel in mid-air, and land heavily on the left wing tip, completely smashing the plane and the left side of the chassis.

The tail, in its career, glanced off the hood of a car, knocking the hood down upon a lady, who, needless to say, was extremely frightened, then fell across the boundary railings, hitting a man on the leg as it fell. The fuselage longitudinals were broken over the tail skid, but the tail was not much damaged. Neither Mr. Melly nor Mr. Werner were damaged; indeed Mr. Werner said he did not know anything had happened till he slid out of his seat; he thought they had cleared the spectators nicely.

It was a miracle that nobody was seriously injured, as the accident occurred right in the midst of the motor cars and spectators, the spectators fleeing in all directions when they saw the machine about to fall in the midst of them. It only goes to prove that aeroplanes still need to be treated with caution, and one should not get over-confident and imagine that, because an accident never has happened, that it never will.

### A New Monoplane.

Captain F. H. Sykes, 15th Hussars, who, during his leave some months ago, took his ticket at Brooklands on a Bristol biplane, is on the General Staff of the War Office. He has visited the centres of aviation on the Continent, and has studied aerodynamics from both the scientific and practical points of view. He is about to devote his time to practising on a new fast monoplane. It is understood he will take part in the discussion on aeronautical maps shortly to be held in the Geographical Section of the British Association. Incidentally, Captain Sykes is about the only European who has ever walked from Peking to Simla.

### Italian Notes.

As things expected have a habit of doing, the Italian dirigible P2 took Milan by surprise on the 8th inst, when she turned into her hangar to rest on her journey from Venice to the seat of the manoeuvres in Piedmont after doing 270 kilometres in 4½ hours, without anything occurring to break the monotony, as the chief officer is reported to have said. This vessel is 63 metres long, and has a 120 h.p. Clement-Bayard motor, and will be watched with great interest during the next weeks, when she will be working with or against No. 3 and in conjunction with the two passenger Nieuports, the two ditto Etichs, and the eight Farman and Blériot army machines, six of which will carry an observer apiece. The Savary, with its "siren" radiator, is, I should imagine, not likely to be of much use till silenced, except, perhaps, for sounding the reveille or as a dinner gong. Salussola is now in military hands, which is better than vegetating, and Turin has followed Milan's example by converting the temporary Mirafiori Aerodrome into a permanent abode for Faccioli, Astéria, Chiribiri, and other explorers.

T. S. HARVEY.

### Védrines and the Michelin Cup.

On August 6th Védrines made his first attempt on the International Michelin Cup. Starting at 4.32 a.m. he covered eight laps of a course of 101.4 kms. between Etampes and Orleans, making a total distance of 811.2 kms. in 10hr. 56m. 42s., his stops amounting to 120 mins. His average speed, with stops, was 73.8 kms. per hour, and without stops 93 kms. per hour, or roughly 56 m.p.h. He was much troubled by the excessive heat, and by the *remous* it caused.

### The Difference.

On the 10th, General Roques, commanding the aeroplane section of the French Army, travelled by air from St. Cyr, piloted by an officer-aviator, to visit the Military Schools at Etampes, the Deperdussin, Blériot, and Farman. He was taken from one to the other by different officer-aviators, and returned to St. Cyr in the evening on yet another machine. One can fancy Generals Haddon or Nicholson starting from Brooklands for Farnborough and Salisbury to inspect the Air Battalion's half-dozen overworked biplanes. Would the dear old gentlemen have the luck?



## IMMEDIATE DELIVERY.

### 400-500 YARDS.

Complete set of parts for building

### No. 3 "Aerial" Twin Propeller Racing Model

including all necessary Wood (planed), Main Aerofoil, Aluminium Elevator, Straining Wire Turrets, Rubber, etc. Finished Varnished Birch Propellers, Protecting Skid, full Instructions and Drawings.

**Post free 2/9**

We have been requested by numerous customers to design a more advanced Set of Parts and have pleasure in bringing to the notice of our Friends our

### AT-17 Set

which, we feel certain, will meet a long-felt want for a model that will rise from the ground under its own power (not pushed), and after a long and steady flight will land lightly on its chassis. The set contains all necessary wood, finished propellers, material for aerofoils and chassis. Complete drawings and instructions. Securely packed in strong wooden box. Length 3 ft. 2 in. Span 2 ft.

**Post free 4/9.**

Mr. F. PHOLE, Lancing, Sussex, writes:—"I cannot help writing to you and expressing how delighted I am with A.T. 17 sets received yesterday. I built the machine in forty minutes, and got some graceful flights. It is really very pretty to see the No. 3 Aerial and the A.T. 17 in the air together. I am trying to get a good photograph of them flying together, and will send you one. A great point in the A.T. 17 is the graceful manner in which it lifts from the ground, which is very pleasing."

Look out for our Steam and Petrol Model Engines, weighing from 2 ozs. complete with propeller.

*More Testimonials next week.*

## THE AERIAL ENGINEERING WORKS,

### BALHAM, LONDON, S.W.

Telephone: Battersea, 1900.

Telegrams: "Supplying," London.

A B C Code, 6th Edition.

## ACCESSORIES



are a feature of our business. Everything required for Aeroplane Construction is in stock ready for immediate delivery. "AVRO" parts are designed upon practical lines by practical flying men.

**BUY YOUR PARTS FROM  
PRACTICAL MEN AND  
ENSURE DEPENDABILITY.**

Telegraphic Price List Post Free.

Every day sees more successful flights made on the "Avro" Biplane. Britain's most successful Aeroplane.

**A. V. ROE & Co.,**

THE AVIATORS' STOREHOUSE,  
Brownsfield Mills, MANCHESTER.

Telegrams—TRIPLANE. Telephone: 698 CENTRAL.

## THE NEW TYPE B VALKYRIE MONOPLANE

HAS NOW BEEN TESTED AND HAS  
PROVED AN UNQUALIFIED SUCCESS

**Especially designed for Military Service.**

THREE TYPES: 40-80 miles an hour.  
**From £280.**

ALL THREE TYPES FLYING DAILY AT HENDON.  
*Tuition Free to Purchasers. Particulars on request.*

## THE AERONAUTICAL SYNDICATE

Established March, 1909,

LTD.,

At the Flying Ground, Collindale Avenue,  
West Hendon, N.W. (6 miles from the West End)

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

### The Scottish Aeronautical Society Model Aero Club.

Competition will be held on Saturday the 19th inst., at Alexandra Park, Dennistoun, under auspices of above club. Competitors to meet at pond 4 p.m. Entrance fee: members, one model, 6d., and 2d. per model thereafter. Others: one model 1s., and 6d. per model thereafter.—Wm. Foster, hon. sec., Rochelle, Limeside Avenue, Rutherglen.

### The Kite and Model Aeroplane Association.

Competition for Association Cup on Saturday, August 19th, at 3 o'clock, will be held in the 100-acre field, Garsfield, Bridge, which can be reached via Perivale Halt Station, G.W.R. Rail motors leave Westbourne Park Station at 1.50 p.m. and 2.15 p.m. The ground will be marked by a kite carrying a banner or Union Jack. It is necessary to catch one of these trains in order to be in time.

### A Naval Disaster.

Commander Schwann, Assisting Inspecting Captain of Naval Airships, was taking his Avro hydro-aeroplane for a trial flight at Cavendish Dock, Barrow, on Wednesday last week, when it capsized. Commander Schwann was immersed, but he managed to get out of the machine, and, rising to the surface of the water, swam ashore, little worse for the exciting incident. The machine was also rescued.

### That Model Flight.

The following is the explanation of the seeming discrepancy between the time and distance of the Mann monoplane model. At Mitcham, on the 29th of last month, each competitor was allowed two flights for duration. In the first of these flights Mr. Mann put up 59 secs., the machine being brought down by a remous with power unexhausted. In the second the machine got away at a great speed and altitude, and in 50 secs. or thereabouts was completely lost to view. It was only by questioning quite a number of people that the model was ever found. It is more than probable that this second duration was in the neighbourhood of 90 secs., but none of the timekeepers could see the model descend. The machine won the prize for duration *not* for distance, in which event the machine was brought down by remous in both trials.

### The Visitors' List.

Among recent visitors was Mr. Ewen, of Lanark, who reported that the outlook at his school was exceedingly cheerful. He has now about ten pupils in hand, and others are coming along. He was up in town making arrangements for supplies for his workshops. Talking of "Circuit," he remarked that the landing ground at the Stirling Control was exceedingly bad, so much so, in fact, that "Beaumont," on arriving, ran into the fence, and had to replace wires in his tail owing to the bump it received. Védrines, also, broke a number of wing wires on landing there, and had to have quite a considerable amount of work done to the machine. Mr. Cody spent the greater part of Monday last week at the Lanark aviation ground, and told Mr. Ewen that, so far as surface was concerned, it was the finest ground he had ever landed on. From personal observation the writer can say that, except for Brooklands and Huntingdon, and, perhaps, portions of Salisbury Plain, Lanark has certainly got a better surface than any others he has seen.

Mr. Bertie Rippen, who spent most of last winter at Brooklands, came in for advice on the subject of aviation schools, as he is again going to take an active part in aviation, and hopes to get his certificate before very long.

Mr. W. D. Johnstone reported that he had just fixed up some exhibition flights in Yorkshire. It is to be hoped that the sporting Yorkshire crowd will not insist on his flying in impossible winds, and smashing his machine, for if they will be content to wait till the wind drops in the afternoon they are sure of seeing some very pretty flying.

Mr. Harry Delacombe, now one of the general representatives of the Bristol Company, called in on his way back from Paris to Bristol and gave a most interesting account of the behaviour of the Voisin-Canard machine. He saw Colliex on this machine start from the aerodrome at Issy, fly over the intervening houses and the Auteuil Viaduct, and alight in the Seine opposite the Voisin works at Billancourt. There M. Gabriel Voisin boarded it, and, walking along the fuselage towards the engine, started the engine up again with an ordinary starting handle from the inside of the machine. After a run of about 200 yards on the water, the machine got up, flew over the Viaduct again, and landed at Issy. After a run round on the ground it again took the air, still with Voisin and Colliex on board, and flew back to Billancourt. Voisin then left the machine, Colliex started up the engine himself, deliberately took the machine on the water through the wash of one of the fast Seine steamers, got off the water about 200 yards behind her, flew over the boat, and came down in front of her, turned round on the water, and then flew back again, so now there is no doubt that the hydro-aeroplane is a success so far as moderately calm water is concerned.

Mr. Hamel, intent on altitude records, called to discuss high flying. The previous evening he had been up to 7,000 feet by way of training. Though he has done quite a large amount of flying at 4,000 to 6,000 feet, he said that his experience last Wednesday was something quite new. He found himself up among the real clouds, and described it as very weird to find oneself on a hot summer evening close under what seemed like a black blanket, tearing past at 60 miles an hour, for the clouds travel at wind speed, whereas the machine always has its own flying speed in excess of that. He said he struck the clouds quite suddenly, and immediately ran into a thick, icy cold fog. Coming down was even worse, for it took him half an hour to get up, so that he had time to get used more or less to the intense cold, whereas he came down in less than ten minutes and dived from a kind of St. Moritz atmosphere above into a regular Turkish bath temperature of 90 deg. down below. The sensation was exceedingly uncomfortable.

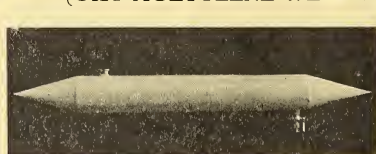
Mr. James Radley came, on his return to London, to tell about his experiences during the cross-Channel trip on Sunday. Evidently he had quite an exciting time between Dover and Folkestone, one remous dropping him a clear 100 feet straight away.

# DAVISON

## REMEMBER THIS NAME

When requiring  
Aeroplane

**TANKS** (in brass, copper, oxy-acetylene welded steel, or other metals.)  
**RADIATORS**  
**REPAIRS**  
**OXY-ACETYLENE WELDING**



Best known manufacturer of these specialities in the motor trade.

Quotations free for oxy-acetylene :: :: repairs or other work :: ::

**A. C. DAVISON,**  
163, Arlington Road, Camden Town, London, N.W.

## CLIFT AERO MAPS

Used in the "CIRCUIT OF BRITAIN" and all Cross-country flights.

Clift Maps were used by Vidart, Kimmerling, Valentine and others in the European Circuit, and by the majority of flyers in British Circuit.

## CLIFT AERO COMPASSES

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators. Necessities for the

"CIRCUIT OF ANYWHERE"

For terms, write—

**Eric Clift,** c/o "The Aeroplane," 166, Piccadilly, W.



# E. T. WILLOWS · LTD.

## AERONAUTICAL ENGINEERS

### SPECIALITY: WILLOWS' DIRIGIBLES

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



#### MACHINES.

**F**OR SALE, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**B**LERIOT cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

**M**ACHINES.—'Avro' Biplane, new, with 30 H.P. Green, £800; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

#### ENGINES.

**60-80** H.P. E.N.V. ENGINE. Absolutely new. What offers?—A.M., 58, Brocklehurst Street, New Cross, S.E.

**50** H.P. ALVASTON ENGINE, perfect condition, fresh from makers'. Replacing by more powerful type. £50 for quick sale.—MALLOWS & Co., Adelphi House, Strand, W.C.

#### PROPELLERS.

**P**ROPELLERS.—'Avro' Propellers of proven efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Sole British Agents, GEO. W. GOODCHILD and PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

#### EMPLOYMENT.

**V**OLUNTARY HELP.—Gentlemanly youth (19), late sec. to well-known Aero Club, is willing to give spare-time services to private aviator-experimentor or firm. Good knowledge of construction and woodwork, and is willing to learn. Must be within easy distance of London. Apply Box 327, AEROPLANE.

**T**O BROOKLANDS' AVIATORS.—Young man offers volunteer assistance. Already had some experience. Write:—"VOLUNTEER" c/o THE AEROPLANE.

**W**ANTED, Certificated Pilot Aviator as instructor Blériot and Farman. Salary and 50% all earnings. 3 months' certain engagement. State lowest terms and full particulars. SCHOOL, c/o AEROPLANE.

**C**ERTIFICATED PILOT-AVIATOR—experience of six types—desires any opportunity for amateur flying, experimental or standard machines.—"AMPHIBIAN," c/o THE AEROPLANE.

#### TUITION.

**T**UITION, with or without limited liability, on Blériot XL; personal instruction.—CHANTER, Aerodrome, Hendon.

**T**UITION.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. More certificates have been secured on the Avro than on any other "All-British" Aeroplane.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**L**ANARK AERODROME, Lanark, N.B.—Tuition by Certificated Aviator on genuine Blériot Monoplanes: Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

**B**ARKHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barkhead.

#### MISCELLANEOUS.

**"MANN" MONOPLANE**—the Nieuport of the model world. *La Feuille Sportive* says: "This is the most efficient machine ever designed." Records 2,535 feet distance, 82 seconds duration. Sixteen awards, ten first prizes. Every machine sold guaranteed to have flown the quarter-mile in 60 seconds. If you want a quarter-mile machine for 2/6 we advise you to apply elsewhere as we do not produce "cheap" models; but for 15/- the "Mann" Monoplane can be obtained post free, well packed, and with full instructions. Materials and instructions for building a "Mann" Monoplane, 5/- post free: "Mann" geared winders, 5/-; "Mann" propellers—marvels of efficiency—3/6 per pair. All spare parts supplied at the shortest notice by the sole manufacturers, WILLIS BROS., 14, Wellington Square, Hastings.

**S**ECOND-HAND BAND-SAW, splendid condition, Tilting Table, Fences, etc., for hand or power. £5.—MALLOWS & Co., Adelphi House, Strand, W.C.

**G**OOD Business in Models and Aeroplane Parts for Sale, in Midland town. Excellent connection Owner moving to London. Replies to Box 326, THE AEROPLANE.

**P**HOTOGRAPHS.—Original photographs of most of the illustrations in THE AEROPLANE can be supplied at short notice, half-plate size 1s., postcard size 6d., from THE AEROPLANE, 166, Piccadilly, W.

**P**OSTERS.—To promoters of exhibition flights; aviators giving exhibitions on their own account; aerodrome proprietors, &c.:—Striking posters in large and small sizes can be supplied in a day or two by arrangement with THE AEROPLANE, 166, Piccadilly, W.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, AUGUST 17th, 1911

[No. 11.

## "BRISTOL" AEROPLANES ARE RELIABLE ... and STRONG.

Write for particulars of

THE "BRISTOL" MONOPLANE

TYPE "P"; and

THE "BRISTOL" BIPLANE

TYPE "T."

LEARN  
TO  
FLY

... at the ...

"BRISTOL"  
FLYING  
SCHOOLS

AT

SALISBURY PLAIN and BROOKLANDS.

They have the Finest Equipment and most  
Expert Tuition Staff in the Country

AND THUS

ENSURE RAPID PROFICIENCY.

SPECIAL TERMS TO NAVY AND ARMY OFFICERS.

Full particulars will gladly be furnished by—

The British & Colonial Aeroplane Co., Ltd.,  
FILTON, near BRISTOL.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

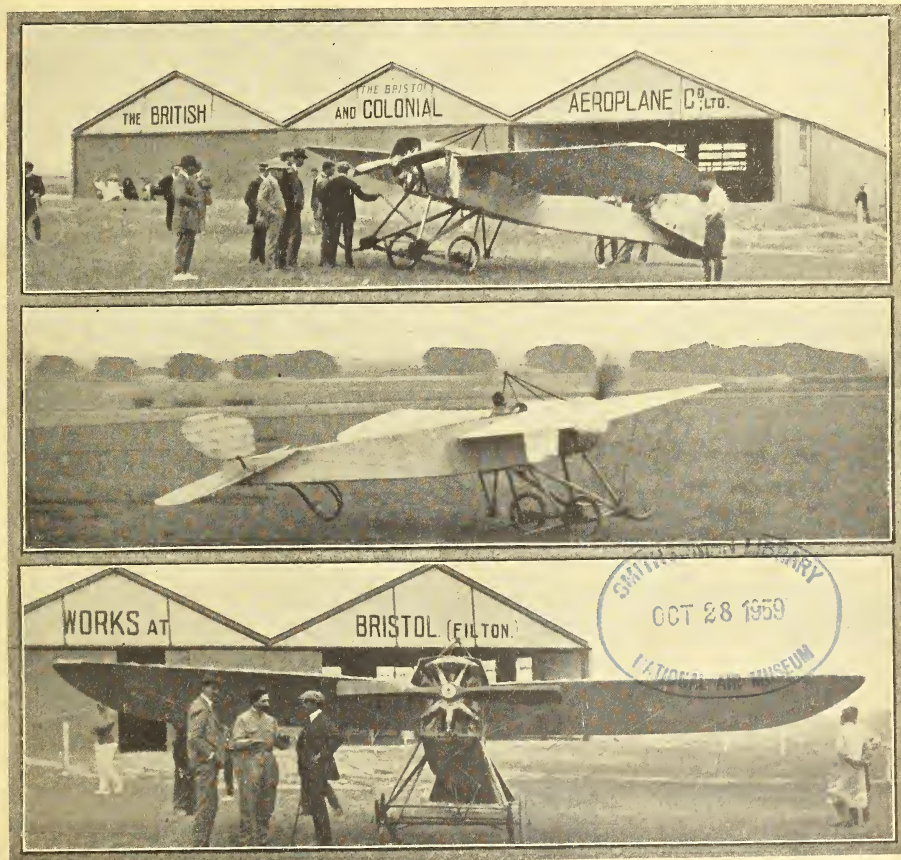
12  
WEEKLY

Vol. I.]

THURSDAY, AUGUST 24th, 1911.

No. 12

The Latest Success.

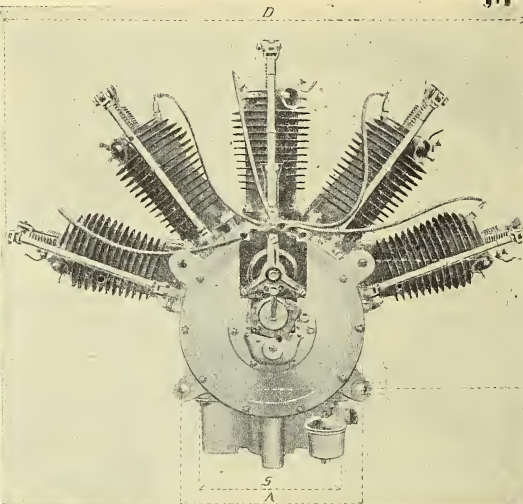
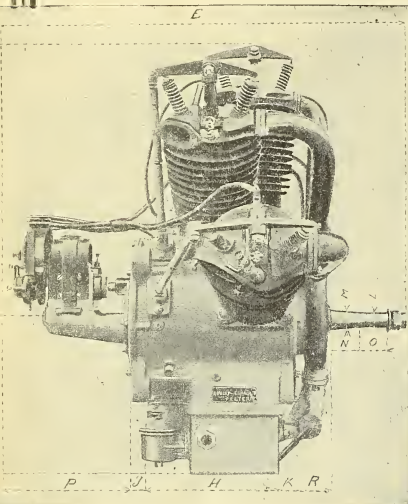


Above: Sir George White, Mr. Herbert Thomas, Mr. Harry DeLaCombe, and Captain Dickson inspecting the new Bristol Monoplane at Lark Hill, on Salisbury Plain, last Saturday. Middle: Prier just jumping the machine off the ground. Below: Prier explaining his theories of stability to Captain Dickson and Mr. DeLaCombe,

SMITHSONIAN INSTITUTION OCT 2 1959



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

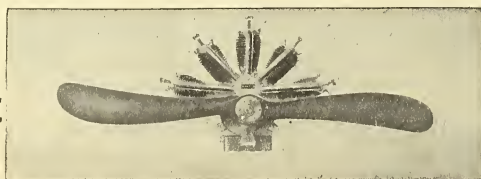
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL OPINIONS...	267-271
THE AIR BATTALION'S VOYAGE ...	274
AN AFTERNOON ON THE "PLAIN" ...	275
THE WEEK'S WORK...	276-8
THE FIRST BRITISH AVIATRICE ...	278

	PAGE
THE HENDON MURDER ...	279
THE PILOT'S POSITION ...	280
THE DANTON BIPLANE ...	281
BROOKLANDS CHANGES ...	284
THE VISITORS' LIST ...	284

## Editorial Opinions.

## Shoreham-Dieppe.

It seems quite likely that the projected Shoreham-Dieppe race will now be cancelled. After discussing the matter with several aviators of considerable experience the writer ventures to suggest that a direct flight from Shoreham to Dieppe is not only unlikely to be supported by British aviators in considerable numbers, but that it is quite possible it might do considerable harm to aviation generally, without doing any particular good.

The point is this: From Shoreham to Dieppe is, as near as no matter, eighty-six miles, which means that on a calm day an ordinarily fast monoplane will take about eighty minutes to do the journey. Should there be either a north-west or south-east wind the journey in one direction may very well take something like two hours. Now we all know that some engines will run for two hours, and considerably more, without attention, but, on the other hand, far more of them will stop, possibly owing to some trivial trouble, even after only a few minutes' run, as witness Morison's descent into the sea at Folkestone.

It is, therefore, quite on the cards that if a dozen competitors started half of them might have to come down in the sea, and it would be obviously impossible to procure the services of a sufficient number of boats to patrol nearly ninety miles of sea thoroughly. There is also fog to be reckoned with, and if there happened to be even a slight sea mist with a side wind at the same time, probably a large number of competitors would be drifted away far beyond the range of any patrol boats.

The truth is that the distance is too great for a cross-sea voyage for the ordinary aeroplane of today. Also, the prizes which are likely to be offered are not big enough, and the distance is not long enough to tempt people to build special machines which would align on the water with safety, and stop there safely, even if there should be something of a sea running, while the necessary repairs or adjustments were being made.

The writer would like to suggest that a far more interesting race would be made by altering the course so as to include Dover and Calais. Let the British competitors start from Shoreham to Dover, Calais, and Dieppe, while the Frenchmen flew from Dieppe via Calais and Dover to Shoreham. This would ensure the crossing of the Channel at the narrowest and, therefore, least dangerous point, it would give the people at all the seaside places along the coast an opportunity of seeing some very interesting flying, and, knowing the sporting proclivities of Dover

and Calais, it would be quite possible to get intermediate prizes put up by those towns.

Now that the people in this country seem to be at last taking an interest in aviation, there is no sense in making competitions unnecessarily difficult or dangerous, for such competitions only lead to loss of life, without in the least impressing anybody, because the man who knows realises that such competitions do not necessitate better flying, but merely greater recklessness on the part of the competitors, whereas those who do not know merely assume that flying itself must be very dangerous.

It is to be hoped that the Organising Committee at Shoreham will take these points into consideration, for then the R.Ae.C. might alter its decision.

## A Superior Brevet.

Some time ago the writer advocated strongly the establishment of a superior test for pilots' certificates. This is now becoming more than ever necessary.

Proprietors of schools are getting to know considerably more about tuning up machines, and while certificate flights are made over established aerodromes the people at those aerodromes know exactly where to look for every variation of wind, and the *remous* are getting so well known that they are called pet names.

The result is that thousands of men all over the world are now fully-qualified aviators without really knowing how to fly. There should, therefore, be some form of test which includes a really considerable amount of cross-country flying, and to those passing this test a special pilot's certificate should be given, analogous to the French military certificate. The ordinary tests are quite enough to permit a man to qualify for ordinary exhibition flying, and show that he knows enough about the handling of an aeroplane to make him useful either in an aeroplane business or as an assistant to an aviator, but certainly it is not enough to show that he is thorough master of his machine under all circumstances.

The mere fact that so many men pass for their certificates after only a week's training, and with no previous knowledge of aviation, is sufficient proof.

The writer gathers that this question is now under consideration by the Royal Aero Club, and it is to be hoped that the committee will institute a degree of "Master Pilot," for which adequate tests must be passed before qualification.

## For the Public Good.

Before many weeks are over the holiday season will be finished, people will be coming back to town, and we may expect to see Brooklands assuming the old well-frequented appearance during

week-ends that it had earlier in the year; but, with the enormous spread of interest in aviation which is taking place, the attendance ought to be regularly at least four times what it was at the corresponding time last year, and it can easily be made so if only the public can be assured that there will be something interesting for them to see when they arrive.

Of course, the new road has undoubtedly, to put it colloquially, "choked off" a very large proportion of the "gate," so far as people who arrive on foot are concerned, for it takes a very brave or a very enthusiastic person to face the "Desert March" on a hot day, and it is doubtful whether people will find it any more acceptable in the winter. The sending of foot-passengers round this road (necessary as it may be for cars when the track is in use) has always seemed to the writer to be a wonderful mistake; for it appears to be so easy to make a footpath, wide enough for two or three people abreast, right from the existing footpath alongside the railway along the back of the banking, crossing the track by a light wooden foot-bridge where the old cart road cuts across the sewage farm.

If this were done, the walk to the sheds from the station would actually be shorter than it was when one could walk straight across the ground itself from the Paddock, and even now, such a footpath could surely be made quite cheaply. One can assure the Brooklands authorities that they would get the cost of this footpath back in a few weeks when once it was known that one could get to the sheds without tramping more than a mile over loose flint.

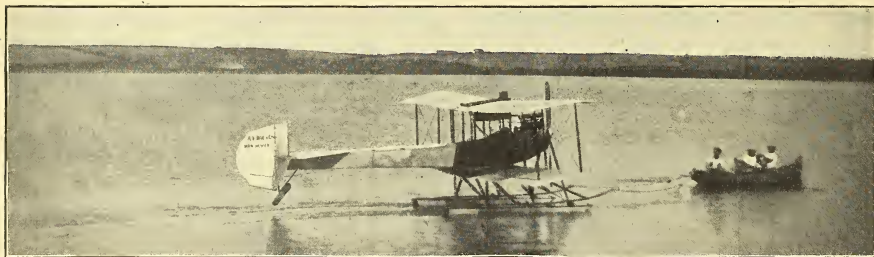
#### A Little Entertainment.

Apart from this, however, something should be done at week-ends to make it worth the while of the shed-holders to bring their machines out and entertain those members of the public who have not as yet much technical knowledge. Even on the calmest days it becomes frankly boring to the ordinary onlooker merely to see a collection consisting largely of antiquated lifting-tail, front-elevator, box-kites floating round and round the aerodrome with apparently no definite object in view. That kind of flying is in these days only permissible to novices.

The obvious cure for this is to fix on some point, say, four or five miles from Brooklands, and arrange proper time tests for flights from Brooklands round the fixed point and back, so as to tempt the aviators to fly across country and to give the onlookers something in the way of excitement, for it is quite possible to work up some excitement in a machine which goes out of sight across country and is due to return at a certain time.

Further, the onlookers should be kept properly informed as to what is going on, and the way not to do it is to chalk up more or less accurate information on a tiny blackboard and hope that somebody may have the luck to see it.

The proper thing to do is to have a man with a good pair of lungs situated in the timekeeper's box at the end of the sheds to announce through a megaphone that Mr. So-and-So is now starting for such-and-such a prize. At all American competitions, even such as baseball games and football matches,



Two Amphibians: Above, the Avro Biplane fitted with floats by Lieut. Schwann (R.N.). Below, the latest Voisin Canard, whose initial success was reported last week. Both would be equally useless in a seaway.

**E. N. V.****ALL-BRITISH AVIATION MOTORS****Made in Three Sizes, viz. :****35 h.p.****\*60 h.p.****100 h.p.**

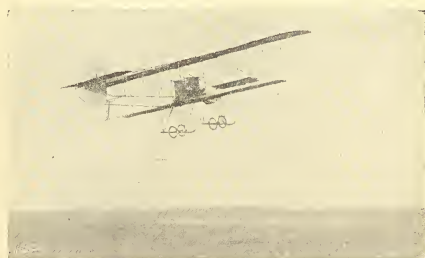
\* Winner of Baron De Forest Prize of £4,000---1910.

The E. N. V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESDEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evotsyn," London.

**HOWARD T. WRIGHT****110, HIGH STREET,  
MANCHESTER SQUARE, W.**Telephone  
8574 GERRARD.*Eight Types***Monoplanes****From 40 to 80 miles per hour****Biplanes****From 36 to 50 miles per hour.**

Catalogue on Application.

**Winner of De Forest Prize**



# The Universal Aviation Co., Ltd.,

166 PICCADILLY, W.

Supply Aeroplanes and all Accessories for them

## MONOPLANES OR BIPLANES.

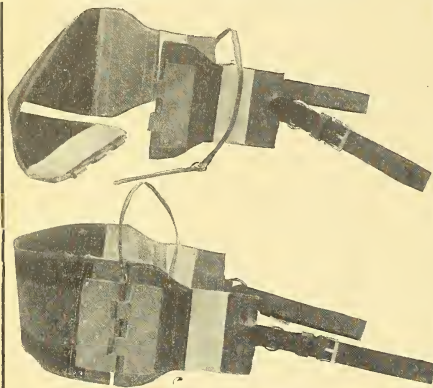
Engines and Propellers.

Timber, Steel Tube and Fabric.

Aluminium in Sheet or Castings.

Petrol and Oil Tanks and all other engine fittings.

Landing Wheels and Skids.



THE "BIRDLING" BELT.

## Aviators' Safety Belts & Helmets

THE BEST AND LATEST  
MAPS & INSTRUMENTS  
FOR CROSS-COUNTRY  
WORK.

Bolts, Nuts, Wires,  
Strainers, Eyebolts,  
etc. Tools of all kinds  
by the best makers.

Telephone: 3407 Mayfair  
Telegrams: "Birdling," London.

WHAT MR. GUSTAV HAMEL THINKS OF IT.



THE ROYAL AERO CLUB  
OF THE  
UNITED KINGDOM.  
166, PICCADILLY,  
LONDON, W.

1643 MAYFAIR

To the Universal Aviation Co. Ltd.,  
166 Piccadilly  
14 July 1911

Dear Sirs

You will no doubt be glad  
to hear that your safety belt  
which I used on the Daily Mail  
Tribute, was of the greatest service  
to me, and I shall certainly  
never attempt a big cross-country  
without it  
Yrs Truly G. W. Hamel

there is an official, known as the Speaker, who insists on the crowd knowing what is going on, and that is the chief reason why motor racing on the track has caught on in America although it has been largely a frost in this country.

If the crowd be reminded every few minutes through a megaphone that something is going on they cannot help taking an interest in it. Supposing a certain aviator be flying across from Hendon to Brooklands, and the crowd be told so, everybody in that crowd immediately begins to look out for the arrival, but under the present system of management, or rather no management, an archangel might arrive without anyone being a bit the wiser, except the few people who happen to know the place well enough to go to the telephone box and find out for themselves.

#### **In Bad Weather.**

Then there are the more or less windy days to be considered. There is no earthly reason why such days should be altogether uninteresting for the untechnical spectator, but naturally the owners of the machines are not going to waste petrol and oil, and wear out their engines, doing straight flights up and down the ground in a wind, nor are they going to risk their machines by trying to put up 15-minute "aggregate flights" in unsuitable weather.

However, it ought to be quite possible, by putting up quite small prizes of, say, £3 to the first and £2 to the second, just enough to pay for running expenses, to induce the shedholders to bring their machines out and enter for starting prizes and alighting prizes.

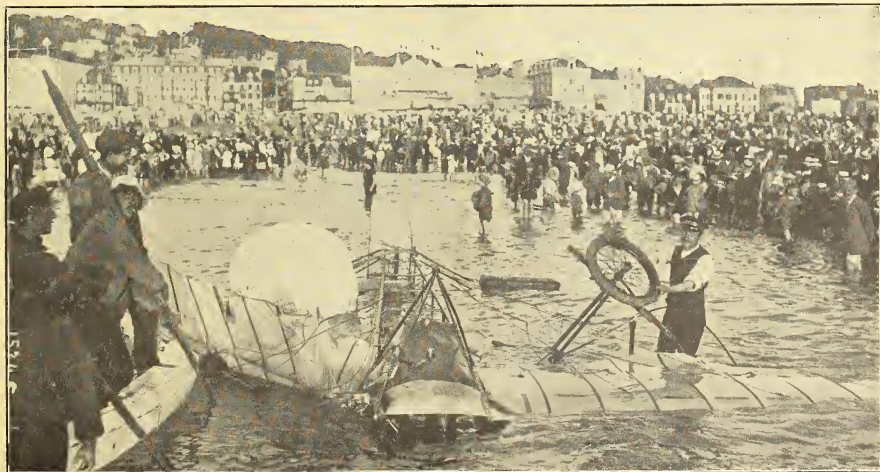
The writer is quite aware that ever since the death of poor Charles Rolls at Bournemouth there has been a prejudice among certain Royal Aero Club

officials, who do not understand aeroplanes, against alighting competitions, but one may point out now that that accident was simply and solely due to the fact that the alighting mark was put in a place which made it dangerous to reach.

Any danger of this kind can easily be avoided at Brooklands, and alighting competitions are not only quite useful in the training of aviators but they are educative to the public, and ought, therefore, to be encouraged as much as possible. The same may be said of starting competitions, for the art of getting the machine off the ground quickly is one which ought to be practised much more than it is by every aviator who wants to fly across country, and at present nothing is done to encourage it.

Very few pilots could tell you just how long it takes their machine to get off the ground under various wind conditions, assuming that their engine is giving a certain pull at a certain number of revolutions per minute. There may be those who would scoff at such events and call them mere "playing at aviation" and "gymkhana stunts," but, as a matter of fact, alighting and starting competitions, properly arranged and properly managed, can be made of very great use; and, if a Speaker on the American plan, supplied with accurate information by somebody who knows rather more about aviators and aeroplanes than does the average official at an aviation meeting, be appointed to keep the crowd thoroughly interested in what is going on, it is safe to say that, wind or no wind, Brooklands will be able to draw quite a decent crowd every week-end, to the benefit of its own finances, to the education of the public, and somewhat to the advantage of those people who have the pluck to spend their time and money in building aeroplanes, and pay Brooklands very adequate shed rents for the pleasure of doing it.

## **How Not to Salvage an Aeroplane.**



Védrines' Morane, shown above, is seen practically wrecked by the rescuers at Trouville, whereas Morison's Blériot was retrieved practically undamaged after three hours in the sea off Folkestone.

## AIR CURRENTS.

## Answers to Correspondents.

D. G. G.—Yes! I think you may very possibly obtain permission from the vergier to fly round the inside of St. Paul's Cathedral. Remember small fee to the caretaker, and also to wipe your feet on the mat.

AUBREY.—I am indeed sorry to hear that you recently landed in an apiary, upsetting seven hives. Cheer up, Aubrey, you will not always have to smile sideways.

BIPLANEUR—Most certainly you have a case against your passerger whose nose bled down the back of your coat. Every good wish for substantial damages.

FOEBERT.—No! There is not a particle of truth in the report that in the interests of M. Védérine Mr. Rupert Turnham-Greene has engaged the Albert Hall for three nights, where, supported by a strong company of Hanwell airmen, fitted out in cerise-coloured fleshings with embroidered sand-shoes, grouped coquetishly around him, he will lecture on (first night) "My Astonishing Career," (second night) "How I Took the World by Storm," and (third night) "What it Feels Like to Succeed." It is stories such as these that do an incalculable amount of harm to flymanship (or perhaps I should say cloudmanship), and I do implore you, my dear Eg., to give the lie to this absurd rumour as widely as you are able.

THOUGHTFUL.—You can purchase quite a jolly little bath-chair very cheaply at Damage's.

OSWALD.—I was most interested to hear of the arguments you have recently been having with your parrot on the subject of automatic stability. Write me fuller details, Os., or, better still, bring the bird round to the office.

UNA.—Yes! I believe it to be a fact that the firm of Duck and Headgear intend offering a packet of hair-nets to the first lady who succeeds in flying from Brooklands to their frou-frou department, on the first floor, where they are offering some astonishing bargains at prices which will make you gasp. Buy your planes at once, girls.

E. N. V.—If, when a lady begs you for your autograph, you wish to be considered up-to-date and modish, remember that you must ask prettily for a hatpin, and with it scratch your name firmly and clearly upon her cheek (or forehead, according to taste).

EX-CLOUDMAN (Brixton Gaol).—Yes! I shall be very pleased to consider your article, "How I Flew from Justice." What a pity your engine failed you!

BOOK-LOVER.—Yes, you are quite right! Some excellent publications have recently appeared. Ask your free library for any of the following, viz.: "London from Above," by D.G.G.; "Aeronautics: The Curse of the Present Era," by Winston Churchill; "The Song of the Sewage Farm," by D.M.H.; "How Cody Flew Before the King," (Anonymously); "Why I Prefer to Remain an Earthman," by H.H.; "How Hornets Hum" (with supplement, "Why Bess Buzz?"), by G.B.; "Reminiscences of a Wonderful Man" (with frontispiece showing the author shaking hands with General Booth after a successful flight), by Rupert Turnham-Greene, assisted by H.H.; and "From Aeroplane to Self-propelled Chair," by H. M. M.-l.-nd.

H. E. W.-tk-ns writes to say he is accompanying Dr. Mawson to the South Pole, in the capacity of pilot of the specially constructed Vickers monoplane.

Splendid news, H.E.W., and now just a few words of advice from an old traveller and well-wisher:—

(1) See to it that you have no holes in your socks, or frost-bite will most certainly supervene.

(2) Don't forget to cut your initials on the Pole.

(3) A black bowler hat looks very well against the snow.

(4) Avoid making a descent upon an iceberg.

(5) Don't forget your Jaeger spats.

(6) Always take your hat off to a Polar bear; it is essential to make a good impression.

(7) Make a special point of wearing your sand-shoes when gambolling near crevasses in the ice, for this type of footwear will not slip where your patent leathers most certainly would! In conclusion, H.E.W., let me wish you God-speed and every "success" on your undertaking, and at the same time allow me to remind you that, in view of the above advice, I regard as my perquisites on your return presentation copies (handsomely bound in Morocco cloth) of the subsequent volumes (inevitable, I am afraid), viz.: "How, Why, and When I Went to the South Pole" (with frontispiece depicting author, marked with X, feeding penguins with Standard bread); "The Antarctic Regions from Within and Without"; "Straight Talks about the South Pole"; "How I Flew before the Esquimaux"; "The South Pole Viewed from Above" (with coloured supplement "The South Pole Seen Sideways"), and Polar Chit-Chat for the Tots."

H. M. M.

## Caused by an "Air Current."

The following note is taken from a local paper: "First Airshipwreck in Cheltenham.—Mr. Higgins's monoplane, which was exhibited at the Conservative Celebration Fête in Charlton Park recently, came to grief as its owner, who is also its designer and builder, was taking it home in the early hours of the morning. Mr. Higgins left the fête ground at about 5 a.m., in order to bring home his aeroplane while the roads were quiet, and he was able to drive along upon his runner wheels at a good round pace without any great difficulty in steering; but while passing along Montpellier Terrace Road his front rudder was suddenly caught by a strong current of air from the Suffolk Parade opening, with the result that the aeroplane slung round and crashed into a tree. The front planes were broken off and the axle buckled, and sundry wires snapped, but Mr. Higgins, thanks to the design of his machine, the front planes of which acted to some extent as buffers, escaped without injury. The aeroplane was afterwards towed home. Mr. Higgins is delighted with the experience afforded by the journeys to and from the park. They have demonstrated that even with a small propeller, not intended to lift the machine into the air, it can be propelled along the road at a great rate. Mr. Higgins is also learning that the way of the inventor is expensive, which would not matter much if inventive zeal and money had been born together, which did not happen in his case."

From *Punch*, of August 16th: "Wieland, the Swiss aviator, has just had a remarkable escape. He fell on a flock of sheep, of which five were killed, but the animals broke his fall. It is now proposed to instal at Brooklands and elsewhere sheep in groups of not fewer than five. Arising out of this incident we learn that French aviators have adopted as *argot* for landing the phrase, "*Revenons à nos moutons*." There's many a true word spoken in jest, for at Hendon last week the sheep were there in full force, only apparently the management, with true English thoroughness, had provided them in groups of six. All the landings were, however, made without their aid.

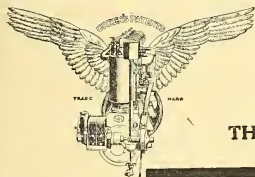


On the left are the sheep referred to above, but three of them refused to stop and be photographed.



# GREEN'S AERO ENGINES

ALL BRITISH



The Green Engine fitted to Mr. Cody's Machine was the only one entered for the £10,000 Circuit of Britain Air Race, and the only British Engine to finish with all parts sealed and intact. This achievement — in conjunction with its past records — proves that the Green Engine is unapproachable for Reliability. Made in two sizes, 30-35 h.p. and 50-60 h.p. Weight, 4 lb. per h.p. Write for particulars.

THE GREEN ENGINE CO. (Sole Licencees under the Green's Motor Patents Syndicate, Ltd.) 55, Berners St., London, W.  
MAKERS FOR THE PATENTEE—THE ASTER ENGINEERING CO., LTD. E.H.G.

## Nieuport Monoplanes.

**GORDON-BENNETT CUP, 1911.**

**1st. Weymann on a Nieuport. 3rd. Nieuport on a Nieuport.**

GENERAL AGENT FOR THE BRITISH EMPIRE:—

**MAURICE DUCROCQ, Brooklands Aerodrome, Weybridge, Surrey.**

## Blackburn Monoplanes

**TUITION.**

**EXHIBITION FLIGHTS ARRANGED.**

**Blackburn Aeroplane Co., Balm Rd., Leeds.**

**MULLINER** LONG ACRE, LONDON  
& NORTHAMPTON, LTD.,

*Aeroplane Works:* VARDENS ROAD, CLAPHAM JUNCTION, LONDON

Aeroplanes Built to Clients' own Designs. Best Material and Best Workmanship.

Clients' Personal Supervision Invited.

**SOLE AGENTS for NORMALE PROPELLERS.**

The most efficient Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race; the European Circuit, and the

Telephone: 1987 Battersea.

"Daily Mail" Circuit.

Telegrams: "Aerocraft" London.

## The Air Battalion.

### A Terrific Experience.

The Air Company has, at the time of writing, left Salisbury Plain, all except Lieut. Cammell, who was left behind tending up his new Gröme. By Sunday last all had reached Oxford or had got beyond it. Lieut. Reynolds had a terrific smash on Saturday when near Bedford. The following is an accurate account of the accident, verified by personal reference to Mr. Reynolds himself and his fellow-voyager, Mr. Barrington-Kennett. Captains Burke and Massy and Lieuts. Reynolds and Barrington-Kennett left Oxford at dawn on Saturday morning bound for Cambridge, whence Messrs. Reynolds and Barrington-Kennett were to go to Thetford. At Bicester all four landed on account of a thick mist. This did not clear till near mid-day, so the flotilla waited for the evening. Reynolds and Barrington-Kennett left at 6.45 and 7 p.m. respectively, and near Bedford were caught in the big thunderstorm which came over London.

Reynolds started to come down, when a gust caught him and turned him right over—a complete somersault. Before he knew where he was it happened again, and then the machine started to come down like a box-kite when the line breaks, in a series of dives, with a short period of floating to and fro between each dive. By a million to one chance Reynolds' machine hit the ground when it was in one of the "floating" periods. It came down upside down, with Reynolds hanging on to the uprights and wires. He was badly shaken and a bit cut about and bruised, but otherwise all right. His escape was absolutely a miracle.

When Barrington-Kennett realised how bad the air was he started to come down (he being behind Reynolds), and did so in an almost vertical dive, with the engine running "all out" to keep control of the machine. He said afterwards that he was flung about like a pea on a drum, and at one moment was shot up to the top plane, landing again on the edge of his seat, which smashed to pieces, so that he had to do the best

he could sitting on the plane itself. Eventually he landed safely without breaking anything.

That neither of the machines broke in the air is a fine testimony to the Bristol workmanship and material. Pixton and England, who have done a great deal of flying in wind, both wear belts to hold themselves in the seat when "dropped" in a gust, and find them most useful.

When Reynolds was about 1,000 feet up his seat and bag fell out of the machine, and the people who were looking on thought he himself had fallen out. Mr. Reynolds will be flying again soon, but the others of the company insist on his taking a rest for a time.

That both Messrs. Reynolds and Barrington-Kennett escaped so well is an immense satisfaction to everyone, for they are both extremely popular with all ranks.

Lieut. Conner was blown down near Oxford and damaged his machine badly, but returned post-haste to Salisbury Plain, got out the "spare," and chased off after the others.

### The Gas Company.

The Gas Company had one of the motor-gasbags out last week, much to the interest of the *Daily Mail*, which suggested its use as a weapon against the strikers. Probably the *remous* caused by the shouting of a mob would blow the poor thing away. Meantime, what has become of the £30,000 *Daily Mail* Clément-Bayard-Ducros machine, and where is the *Morning Post* Lebaudy?

On Friday the Balloon Factory's experimental aeroplane managed to kill one of the staff, as a good many people expected it would do.

Can anyone, official or unofficial, explain why the Valkyrie machines presented to the Government by Mr. H. Barber, of the Royal Aero Club, are still lying in their sheds at Hendon, although the Air Battalion wants machines and the Valkyries have now proved themselves fast and able to fly in a wind? Is it jealousy at the Balloon Factory, or what?

### Pizey's Flight from Salisbury to Ventnor.

Collins Pizey endeavoured to leave Salisbury at 3.30 on Monday afternoon of last week for Ventnor, but found the air eddies so bad that he was obliged to return to the sheds. The following is his own account of the voyage: At 5.45 he again made a start, finding the weather greatly improved, so immediately made direct for Ventnor, leaving the Plain at 800 feet. He had a very comfortable journey as far as Southampton Water, up to there meeting with a few bad remous whenever he was over the water. While passing down on the right of Southampton Water he had terrible weather.

On reaching the Solent conditions again bettered and the flying was delightful. Just after passing Cowes the engine missed very badly several times, so he found a field and landed. On examining the motor, he found it very hot, and the oil pump had commenced to leak badly. This was put right, so, waiting till motor was quite cool, he started again, intending to fly while he had sufficient light. As dusk approached he found a field near Carisbrook and landed there, taxiing the machine into a corner of the field. Not a soul was to be found anywhere, so he covered the motor with his coat and walked to Carisbrook. There he was able to telephone and arrange for mechanics to be sent to him.

There was a strong but very steady wind blowing, and, leaving next morning, he had a most delightful flight in spite of the wind, conditions in the air being practically like a dead flat day.

On approaching Ventnor he wished to locate his position, and so circled round at the top of the cliff, which is here about 60 to 70 feet high, till he could see the pier and promenade, and then turned so as to come back to the top. At this moment a fearful gust caught him and blew him right out to sea. At the same time he dropped 60 or 80 feet. Within a moment he had lost all altitude, coming down in a series of leaps, the machine standing completely on its nose time after time. He went out about four miles from the shore to try to regain the lost altitude, but the further out he got the worse it seemed to be, so, making for shore at about 100 feet above water, he endeavoured to reach even ground.

From 50 yards out from the edge of the cliff to the cliff itself he had practically an easy time, but just as the elevator was over the shore, the tail dropped suddenly, the whole machine coming down and at the same time turning round into a position directly at right angles to the direction in which it had been going, despite all his efforts to right her.

She was blown flat against the cliff, which happily was covered with ivy trees and other bushes, which broke his fall considerably, and, catching in the undercarriage, held him suspended half-way up the cliff.

The machine was ridiculously little damaged considering the bumps the only things broken being the propeller, elevator booms, elevator damaged, two chassis stanchions damaged, one bottom plane broken and one top plane damaged, the tail booms, tail and tail skid and aviator being quite intact.

Valentine arrived the same morning as Pizey. He himself says that he had a miraculous escape. On landing, he was tipped over at an alarming angle, his controls not answering till just as he was touching the ground, where he landed marvellously without breaking anything. He afterwards made exhibition flights from another field right on top of the downs at Ventnor, not wishing to repeat his experience of the arrival on Tuesday.

### Gordon England's Smash.

In response to inquiries as to his personal welfare, Gordon England sends the following account of his accident in the Isle of Wight: "I have not hurt myself much. I cut my nose to the bone with a wire, and my lips were also rather damaged. I was also a bit knocked about, not hurt much."

"I flew from Salisbury to Newport in a very strong head wind (it took 2½ hours to do about 48 miles), and came down at Newport for petrol, as I knew I must be running short. It was lucky I came down, because as I started the *vol plané* the engine stopped altogether for want of petrol. I made a beautiful landing, and after having been on the ground for a quarter of an hour, was surrounded by some 3,000 people."

"As soon as I had filled up with petrol I started off, although it was dark, because I was afraid the crowd would damage the machine; I could not keep them off it. I got away all right, but had not gone more than three miles when I was caught in a very bad gust of wind. I thought I had better come down, and was making a landing when I got another gust which made the machine dive, and it landed on the skids. Before I could right it it pitched on to its elevator and I was thrown out. My first thought was 'Here goes, my first Bristol smash.' I was very much riled about it, I tell you."

"All the Ventnor people have been very kind to me, and looked after me with great care. I am now home for a few days.—E. C. GORDON ENGLAND."



## An Afternoon on the "Plain."

By C. G. GREY.

Last Saturday, when London was in the throes of a thunderstorm and generally uncomfortable, I had the good luck, thanks to an invitation from Sir George White, to be spending the evening on Salisbury Plain watching the "trying out" of the new Bristol monoplane, now rebuilt and somewhat altered since its smash at Brooklands at the start of the "Circuit."

On that occasion some people criticised the wing formation, but now it would be hard to find fault with it. The new wings are very flat, and considerably greater in span, with the result that, although not tuned up to Prier's satisfaction, the machine is terrifically fast, and glides very well indeed.

Prier handled it beautifully, and made several big circuits over the Plain in a nasty, puffy wind, which, although it made things uncomfortable for the biplanes, did not seem to affect the monoplane in the least.

The machine is exceedingly quick on the controls, owing to the fact that she has a balanced rudder and elevator, that is to say, the pivots on which each works are placed part of the way aft along the surface, so that when the after part of the rudder moves to the right the front moves to the left, and when the after part of the elevator moves down the front moves up, and *vice versa*, so giving enormous power with very little effort. Besides this, there is no fixed empennage, and so no "damping" effect, except what is provided by the covered-in fuselage, and the said fuselage itself is very short, so every control is very quick. Of course, for men with slow hands it will be easy to damp down this quickness of action, but men of Prier's class prefer the maximum of control in their own hands.

The machine flies, apparently, tail high, but this, as in the case of the Nieuport, is largely an optical illusion, caused by the shape of the body and the position of the rudder, and in any case it is an advantage, so long as it does not slow the machine through increasing the head-resistance on top of the fuselage, because when the machine really has to climb there is less danger of her dropping her tail and losing way. Altogether the machine is very taking to look at in the air.

When one comes to inspect it at close quarters one has more respect for it still, because its strength of construction must be enormous compared with some of the Continental machines. The engine housing and the method of fixing it is very strong indeed, and the fuselage is built up throughout without piercing the longitudinals, the cross-pieces being held in position by steel fitch-plates, to which the tension-wires are fixed. Prier has fitted double control-wires all over the machine, and the rudder and elevator levers are steel plate instead of aluminium, as in some foreign machines. In fact the whole construction is bound to give one confidence.

I gather that when this machine has quite satisfied its

proprietors it is to be followed by a bigger two-seater on similar lines, and such a machine should be just the thing that we want for military purposes, and have not got.

It is interesting to note that, after his trials early in the afternoon, Prier fitted a Normale (Ratmanoff) propeller for his last trial, and the machine was at once noticeably faster and better in general department. Prier has always believed in the Normale, and used it in his London-Paris flight. De Conneau has also used it in his recent victories.

At a guess I should say that the new Bristol is about as fast as the Nieuport with a similar engine, which is equivalent to saying that it is as fast as anything in the air.

During the afternoon the biplanes were out in force, piloted by Jullerot, Busteel, Fleming, and Pizey, the last-named just back from Ventnor after his unfortunate smash and very anxious to find out whether his nerve had suffered in consequence. Apparently it has not, for he made a couple of very pretty flights. Both Busteel and Fleming handle their machines splendidly and are proving most capable instructors. Jullerot, of course, is one of the old hands, and his flying is well known to everybody.

The Bristol school on the Plain is getting busier and busier. It was only properly started on April 11th, and there were then two pupils. The day I was there there were seventeen, besides others at Brooklands, largely naval and military men.

The pupils at present at work are:—In the circuit stage: Captains Pitcher, Hoare, and Stuart, Professor Petavel, and Mr. Pitman; in the straight flight stage: Lieut. Bolder, R.N., and Messrs. Gibson, Mellersh, Harrison, and Slater; and in the tuition stage: Captain Newall, Lieut. Joseph, R.N., Naval Cadet Wheeler, and Messrs. Cockerell, Smith-Barry, and Watts.

Since the Bristol schools were started twenty-seven certificates have been won on Bristols. During the past four months 923 flights have been made from the Lark Hill (or Plain) school, and these total to just on 11,000 miles, all without a serious accident (except for Mr. E. M. Maitland's broken legs), and there have been 22 point-to-point cross-country flights, each over 40 miles. As a matter of fact every flight is across country, in so far as it is over roads, streams, and over or round woods, but the Plain is free from hedges, ditches, and rows of, or single, trees—that is why it is so good as a training ground.

The Plain has a charm that it all its own, and after a course of training there it is generally quite difficult to drag the pupils away. Certainly it is the finest training ground for fliers in this country.

As I reluctantly left at dusk, Mr. Cammell, of the Air Battalion, the last of the soldiers remaining on the Plain, was endeavouring to start up his new Gnôme, what time Bristol biplanes flew contentedly over his head.

### The Death of Theodore Ridge.

Mr. Theodore Ridge, an assistant at the "Army Aircraft Factory," was killed on August 18th by the experimental biplane built by the erstwhile Balloon Factory. He had managed, unfortunately, to make the machine fly after a fashion, and on Friday evening was out on it. The machine came down nose first, with the natural result that the unfortunate Mr. Ridge was buried under the heavy parts of the machine, which were all behind the pilot's seat.

Mr. Ridge only took his pilot's certificate a week or two ago, under the instruction of Mr. Fleming at the Bristol school on Salisbury Plain, evidently recognising how dangerous Farnborough is for a beginner. He already possessed his certificate as a pilot of dirigibles.

Readers of THE AEROPLANE will remember that many weeks ago a very fairly accurate description of this death-trap of an apparatus was published in the "Air Currents" page. The machine was treated humorously, as it seemed impossible that anyone with any practical knowledge of aeroplanes could possibly evolve such a contraption with serious intentions. It was somewhat surprising, therefore, to see elaborate drawings and photographs of it appear without adverse comment in a journal the staff of which has certainly good claim to experience of aviation. Since then the machine has made some few flights, but unfortunately without an accident

serious enough to convince the officials at the "Aircraft Factory" that it was really dangerous.

Poor Mr. Ridge himself was a member of the staff of the "Factory," and must therefore be held jointly responsible for his own death, but that responsibility must be shared by every official in that establishment who did not openly and vigorously protest against the production of a machine which was absurd in its conception, ludicrous in its design, and murderous in its performance.

It is to be hoped that the "Factory" will in future confine its activities to repairing machines made by people who have real knowledge of design.

### The Mortimer Singer Prize.

The second flight for the Mortimer Singer Prize for officers-aviators with passengers was made on August 15th by Lieut. E. L. Gerrard, R.M.L.I., with Lieut. Wildman-Lushington as passenger. The pair scaled 21 stone 9 lbs., and their mount was a Short naval biplane No. 34. They flew six laps of a course marked by Mussel Manor, Shell Ness, at one end, and H.M.S. *Actæon*, in Sheerness Harbour, at the other. Their distance was 129 miles, the fastest lap taking 26 minutes and the slowest 42 minutes. The total time taken was 4h. 15m. Mr. Lushington told the writer afterwards that they had a good journey all the way, except for a bit of a shaking-up from gusts in the second lap.



## The Week's Work.

## Monday, August 14th.

**BROOKLANDS.**—Pixton out in morning with Bristol pupils, including General Henderson, the latter rolling alone for first time. Raynham on Avro engine-behind biplane and Johnstone on H.W.-E.N.V., both out early. De Montaleant, on Bréguet, started for Paris, but came down at Dorking, slightly damaging the skid. Machine ultimately brought back to Brooklands, which it seems unwilling to quit after its triumphs there. Percival out in evening. Pixton short flight outside track with General Henderson's son as passenger.

**FLEY.**—R. J. Isaacson, designer of the Isaacson Engine, has joined Blackburn school, and has made several straight flights. H. R. Farren, another new pupil, doing well under tuition of Hubert Oxley, and should shortly be able to go for brevet.

**EASTCHURCH.**—Lieuts. Samson, Longmore, and Gregory all out in morning.

**BELFAST.**—Harry Ferguson, on own monoplane, doing short flights in straight line to tune up machine and engine.

**HENDON.**—Valkyries out at 3.30 a.m., when Barber took Mr. Newman, of Cambridge, several circuits. Though anemometer only registered 10 m.p.h., the air proved exceptionally tricky even thus early, machine dropping 30 ft. and 40 ft.

## Tuesday, August 15th.

**LAFFAN'S PLAIN.**—Cody, out manœuvring with 3rd London Infantry Brigade over Laffan's Plain and Long Valley, made a fine reconnaissance flight. General Sir John French, General Codrington, and Major-General Henniker-Major showed great interest in the flight.

**BROOKLANDS.**—Spencer Grey (apologies for spelling him with an "a" last week) took his ticket in excellent style, all done in a fortnight's leave. Raynham and Noel out on Avro. Ducrocq out, with Pequet as passenger. Pixton out with General Henderson as passenger on Bristol. The latter then flying circuits alone, first time in air. Afterwards two other flights, totalling 35 mins. in all, average height 60 ft. and maximum 130 ft. Wonderful progress. First time in aeroplane at all was Wednesday previous. In evening did two other flights of 10 mins. each. Pixton then took up passenger. Percival up to 500 ft. on the "Oozley Bird," singing exultantly, and came down at much the same angle as that of

ascend. Valentine off to Ventnor at 7.15 a.m., and took just about an hour over the ninety miles.

**SHOREHAM.**—Collyer biplane arrived by road from London. Built by original designer of "Otael," of Brooklands fame.

**BELFAST.**—More tuning-up flights by Harry Ferguson. Machine improving as various adjustments are made.

**SALISBURY PLAIN.**—Wheeler and Smith-Barry (a new pupil) doing passenger flights with Jullerot. Ordinary passenger-carrying, as well. Busted giving lessons to Gibson, Hoare, and Harrison (an Australian party), all showing signs of rapid progress. Fleming instructing Cockrell, Watts, and Stuart. Hotchkiss, who has developed into a very fine flyer, as witness his half-hour test flight of the latest Army Bristol last week, in a very stiff breeze, took Wheeler for instruction flight.

**EASTCHURCH.**—Naval men out, Lieut. Longmore across country.

## Wednesday, August 16th.

**BROOKLANDS.**—General Henderson had 12 mins. doing practice flights in early morning, and then went for certificate at 5 a.m., flying magnificently at 200 to 250 ft. Performance a credit to all concerned, including the Bristol machine and his instructor, Howard Pixton. Later Brereton up as passenger with Pixton. Brereton then had a quarter of an hour's rolling. In evening Pixton out on England's "Circuit" machine, and, dropping on a turn, had to straighten out and land gracefully in sewage farm, doing no damage except to propeller. Rumour has it that he was looking for his pet remou. Later on Pixton out on school machine with passengers. Raynham and Young out previously on Avro biplane. First appearance of Naval Cadet Robinson, aged 14½ years, latest recruit to Deperdussin school. Very promising pupil. Lieut. Harford, R.A., made first appearance also, on Universal Aviation Co.'s Anzani-Lane monoplane. Performing usual piroettes of the monoplane novice, but showing distinct understanding of the game.

**BURNHAM, SOMERSET.**—Fine exhibition flights by B. C. Huicks on Blackburn monoplane. Great success.

**SHOREHAM.**—Collyer's partner, England, busy putting machine together. Metzgar-Leno machine also approaching completion.

**BEAULIEU.**—J. A. Drexel on his old Bourne mouth meeting Biériot out across country. Machine going as strong as ever.

**BELFAST.**—Ferguson monoplane out, still doing straight flights, increasing in length.

**SALISBURY PLAIN.**—Lieut. Beals Wright made good figure eight, and, later in day, did first part of his certificate flight. Captain Pitcher, Captain Hoare, and Mr. Stuart each did two



Gustav Hamel, as an instructor, explaining the controls to a new pupil. Standing alongside are Mr. Sassoon, of the Universal Aviation Company, and Mr. Chereau, of the Biériot Company.

straight lines successfully. Pilots very busy giving instruction to all pupils. Mr. Stuart and Captains Hoare and Pitcher each did circuits in line style, and, as already mentioned, Lieut. Beals Wright did first part of brevet flight.

HENDON.—Miss Trehawke Davies up as passenger on Valkyrie, in nasty gusty wind, with Mr. Barber. Buckled wheel on descending, and so stopped any lengthy flight. Copland Perry out on new Green-engined school Valkyrie. First attempt on new machine, but did numerous right and left curves and excellent landings. Machine terrifically fast, and seems to handle easily. Extraordinary accident in morning. Dyott, on Farman, came down in front of old Blériot-Anzani, just vacated by Gresswell. Too late to stop, so tried to jump. Skid of Farman hooked cabane of Blériot, lifted her bodily, and then sat down flat on telescoped fuselage of Blériot. Chassis of Blériot and main planes of Farman hardly damaged. Everything else matchwood. Dyott undamaged. Lieut. Dahlbeck put up excellent brevet flights on biplane.

EASTCHURCH.—Lieut. Gerrard, with Lieut. Wildman-Lushington as passenger, put up British Passenger Record, and Lieut. Longmore out across country with Captain Nicholson as passenger.

BLANDUONO AND NORTH WALES AERODROME.—M. Favre brought out old-type Short biplane, but found propeller too coarse a pitch and wired for new one.

#### Thursday, August 17th.

BROOKLANDS.—Nothing doing in morning. Blondeau out getting bumped about although no apparent wind. Later slight mist steadied air and Blondeau took up pupils. In evening Pixton up with passenger. Noel, on Avro, made an *atterrissage brusque*, breaking sundry chassis struts.

BURNHAM, SOMERSET.—More exhibitions by B. C. Hucks on the Blackburn; enthusiasm of district increasing rapidly.

SALESBURY PLAIN.—Lieut. Beals Wright secured his brevet, making exceptionally fine flight for second test.

HENDON.—At 4 p.m. school pilot made short test flight on school Valkyrie before handing it over to Copland Perry, who unexpectedly made five circuits of the aerodrome, rising steadily the while. When on point of ascending a Blériot crossed immediately in front of him, giving onlookers a bit of a chill, but Perry proved equal to the occasion, rose quickly, and cleared the monoplane by 20 ft., then continued to ascend calmly to 200 ft. Seemed quite at home at this height, flying steadily, and, cutting off his engine over the sheds, made a really fine *vol plané*, coming down by the enclosure. Miss Davies and Mr. Thonemann up as passengers.

EASTCHURCH.—Lieut. Longmore out before 6 a.m. on Naval School. Went over to Whitstable, via Leydown, and back again.

#### Friday, August 18th.

BROOKLANDS.—Mrs. Hewlett took her ticket at 5.15 a.m. on Blondeau biplane, putting up an excellent performance. Afterwards Blondeau out with Grahame-Wood. Then Longstaffe up for first time to do circuits alone, when, on second time round, a Gnome cylinder blew off (ring at bottom of cylinder stripped), taking part of propeller with it. Longstaffe did involuntary *vol plané* and a harmless landing. Morison out in evening on Martin-Handasve, and burst a tyre after short run. Repaired this and then did some straight flights. Pixton took Bretonet up, then the latter made two flights alone of 6 and 8 mins. at 50 to 120 ft. In evening Pixton doing short flights from 6 to 8 p.m. and took up a passenger.

MINERHEAD, SOMERSET.—Great excitement caused by arrival of B. C. Hucks on Blackburn monoplane from Burnham. Rather than risk delay by train and railway strike on Great Western, Hucks flew the twenty-five miles. A fine demonstra-

tion of real capabilities of the aeroplane when other means of transport fail. In evening excellent exhibition flights.

BLANDUONO.—King, on engine-behind biplane, made very pretty flights in morning and another flight in afternoon. Propeller of Short was cut down, as new one had not arrived, and M. Favre made some long hops.

BEAULIEU.—J. A. Drexel again out on Blériot, well up.

HENDON.—Valkyrie pilot, with usual care, made test flight on school machine before handing it over to pupils, and then made a characteristic flight of 40 mins. on Valkyrie racer over Hendon and the "Welsh Harp" at 2,000 ft. Perry showed wonderful improvement, making flights of 15 and 20 mins. inside aerodrome. In evening Barber gave fine demonstration on the racer, going up to 2,500 ft. With a splendid *vol plané* he came down to 100 ft., and carried out effective spectacular evolutions. Particularly interesting and instructive was an impromptu race with a Farman biplane, the Valkyrie literally flying rings round it. Barber came up with it over the railway bank and made a complete circuit round it. Before the Farman had accomplished more than half a circuit of the aerodrome the Valkyrie was passing it again. Difference between the speeds of the two machines was thus strikingly demonstrated; yet the Air Battalion has to go on with the old slow type, while their own machines of the faster type remain in their sheds at Hendon. At same time Perry doing fine flights at 200 ft. Later on passenger flights were given to Miss Meeze and Mr. Ridley Prentice.

EASTCHURCH.—Lieut. Samson only one out.

#### Saturday, August 19th.

BROOKLANDS.—Raynham took up a passenger for some circuits. Young up on the repaired engine-behind Avro biplane with Raynham behind as instructor. Spencer took his ticket in good style on own-made biplane. Porte, on Deperdussin school machine, did a circle, and budding admiral made excellent straight lines. Noel out on the Avro, and Spencer out in evening. General Henderson, on Bristol, did a *vol plané* into the wash of the "Oozely Bird," and very cleverly saved what might have been a smash. Harford, rolling on "Birding," rolled quite straight for a quarter mile, and suddenly did a magnificent circle (on one wing-tip). In morning, Bretonet, on Bristol, did 20 mins. non-stop. Pixton then did a short trip only. Bretonet afterwards practised figures of eight for 10 mins., and later went up as passenger 10 mins. In afternoon, Lieut. Hall, R.N., a new pupil, up with Pixton two flights. Pixton then took up Baron Roenne, of "airship" fame, for two circuits. The Henrietta, with her rebuilt Clerget, out for first time, with H. Petre in charge, now chief pilot of the Hanriot school, vice E. V. B. Fisher.

BLANDUONO.—King made very good flight on his own machine. Then, as Green engine was pulling well, M. Favre tried again to get the old Short up. Machine got up a good speed and M. Favre tried to jump it over a wide ditch at the boundary of aerodrome, but it failed to rise and was smashed up. The aviator was able to walk back to his shed.

BELFAST.—Ferguson out in 20 m.p.h. wind. Did ten straight flights, each of a mile in length.

BEAULIEU.—Drexel, up at 2,000 ft., across country on the old Blériot. Says she flies as well as ever she did.

BRISTOL.—During strike trouble Hotchkiss went up to Temple Meads Station and volunteered as stoker. Got on to the footplate, and was just about to start when driver, on reflection, decided not to take him, on the grounds that he was inexperienced. Hotchkiss's explanation that he had had experience in driving aeroplanes seemed to have scared the man rather than reassured him.

HENDON.—Miss Trehawke Davies again on ground anxious



The sat-upon Blériot at [Hendon, and the remains of the Farman that did it.



for another cross-country trip per Valkyrie. Unfortunately mist very thick, so advisable to remain inside aerodrome. School pilot flew ten circuits with Miss Davies, at 500 ft. At 5 a.m. 10 m.p.h. wind, but this did not stop the energetic Perry, who proved he has fine control of machine, and should be ready for brevet tests in a few days. At 4 p.m. Perry opened up the afternoon's exhibition at the aerodrome by flying four circuits, but stopped owing to thunderstorm.

**EASTCHURCH.**—Lieut. C. R. Samson put British Duration Record up to 4h. 58m. 30s., against Cody's 4h. 47m. Did this after an hour's preliminary flight with a passenger.

**SALISBURY PLAIN.**—Fine flying by Prier on the new Bristol monoplane. Pizey, Busteed, Fleming, and Jullerot all taking passenger and pupils.

#### Sunday, August 20th.

**BROOKLANDS.**—Foggy morning. Petre, on the Henrietta, just missed a bath in the river, and Hamilton, a Deperdussin pupil, rolling on the school machine, hopped over a bank into the sewage farm. This marks official reception of the "Dep" to Brooklands, no new make being a permanent part of the system till it has been received into the "farm." Percival on the "Oozely Bird," and Pixton on the Bristol also out. Hot east wind all day and thunderstorm at night, so no more flying, the evening being devoted to pianoforte recital by Mr. J. C. Savage in the "Blue Bird."

#### The First British Aviatress.

At 5.15 a.m. on Friday last Mrs. Hewlett, the wife of Mr. Maurice Hewlett, the well-known author, did the necessary qualifying flights for her pilot's certificate. It may be well to state once more that these consist in doing five figures of eight, finishing with a landing within 50 yards of the observers, and then a further five figures of eight, with a similar landing, and in the course of these flights the candidate must rise to a height of 160 feet.



Mrs. Hewlett is a partner in the Blondeau-Hewlett aviation school at Brooklands, which has already turned out a number of fine flyers, and she has taken her certificate simply so that she may have a thoroughly practical knowledge of how a machine should be handled. It is not her intention to go in for exhibition flying, or to fly professionally in any way.

Mrs. Hewlett is the first woman of British nationality to obtain her pilot's certificate, and she is also the first woman to do a right-hand turn and to reach a height of over a hundred feet in this country. In the course of her training she has flown, both as passenger and alone on the machine, for many hundreds of miles, and has a far better knowledge of practical aviation than most male pilots.

#### Congratulations.

THE AEROPLANE offers congratulations to Mr. E. de B. Whittaker on his rapid recovery from his smash. He is looking surprisingly well considering how bad the accident was. The occurrence was the more unfortunate as Mr. Whittaker was not merely amusing himself on an old and decrepit machine, as was his original intention when going to Eastchurch, but was seriously tuning-up a Gnome-Farman for regular passenger work, and when he is engaged on a serious matter of this kind he is one of the most careful of drivers. He has had considerable experience in France of various types of machines, and though he has not had much practice recently he was handling the machine very well at the time of the accident, which was one of those which could only have been avoided by a man who was thoroughly used to his machine. Mr. Whittaker's knowledge of the theory of aviation and the people concerned with flying is great, and he has quite a pretty knack of handling men, as his work at Dover during the European Circuit showed, so he ought ere long to distinguish himself in other directions.

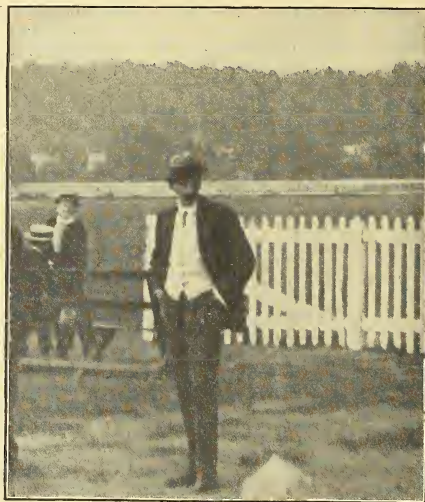
Congratulations also to Lieut. E. M. Maitland, who broke his legs on Salisbury Plain in March last. Since then he has been in hospital in London, and more recently at Frimley, near Aldershot. A fortnight ago he was well enough to go to the

Isle of Wight, where he is now hobbling about on crutches. He writes that he is steadily increasing his speed, distance, and duration records, and intended this week to go for altitude records up the stairs. He has, however, been advised to tune up a bit first, for though his supplementary spurs may be very useful in aiding lateral stability they are of comparatively little use longitudinally, which is all-important when altitude is attempted. All wish him a quick and complete recovery.

#### The First General Officer to Qualify.

On Wednesday, August 9th, Brigadier-General David Henderson, Chief Staff Officer to Sir John French, under the *nom de vol* "Henry Davidson," had his first lesson from Howard Pixton at the Bristol Schools at Brooklands, and after only a week's instruction he made the qualifying flights for his aviator's certificate.

It is worthy of note that during the week's training he made eight trips as passenger and only six solo flights (the latter totalling sixty-seven minutes) prior to going for his ticket on the 15th.



General David Henderson: Pilot-Aviator.

It is a matter of considerable interest that an officer of his rank, and one holding so important a post, should have acquired some practical knowledge, and so be able to speak with a certain amount of authority on aviation.

The Air Battalion has, up to now, been composed exclusively of company officers, and, though one or two of them deserve higher rank, it is only right that senior men should take a practical interest in what is being done, for ere long the Air Battalion is bound to grow to such an extent that it will become two separate battalions, one for dirigibles and one for aeroplanes, and then it will become a brigadier's command.

#### Ducroq in the North.

Some excellent flying has been done during the past week by Mr. Maurice Ducroq at Worlington, Cumberland, where he has been using Lonsdale Park as a starting and alighting ground. A number of local people of note have made passenger trips with him over the surrounding country and out over the sea on his engine-behind biplane, some trips extending in the direction of Carlisle.

#### An Alleged Height Record.

It is reported from America that an aviator named Oscar Brindley, at the Chicago "Meet," flew on a biplane on August 19th to a height of 11,766 ft. Later despatches say that the record was irregular, but that Lincoln Beachey reached a height of 11,578 ft. next day.



### The Second Swedish Aviator.

Lieutenant Carl Olaf Dahlbeck, of the Swedish Navy, is as fine a specimen of a sailor and a Scandinavian as one could wish to meet. He has recently taken his pilot's ticket on a lifting-tail, engine-behind biplane, at Hendon, though his predilections are in favour of the safer and more efficient type. He is the second Swede to become an aviator, the only other being Baron Cederström, who took his ticket on a Blériot at Pau last year. Lieutenant Dahlbeck flies well, and uses his head when flying, as was shown when, after completing his qualifying ten figures of eight, he was forced to earth by a downward gust over the railway bank at Hendon. He told the writer that the Swedish Navy is likely to take quite an active interest in aviation, especially in the use of the hydro-aeroplane, for the coast of Sweden is bordered, especially up towards the Gulf of Finland, by archipelagos formed by numbers of small islands, which form, between themselves and the mainland, salt-water lakes, which are never so rough as to make it dangerous for an aeroplane to alight on them.



Lieutenant Carl Dahlbeck, of the Swedish Navy.

### The Hendon Murder.

The most extraordinary affair that has yet happened in the history of aviation is the murder of poor Petitpierre, the secretary of the Blériot school at Hendon, by Havant, a recently-joined Swiss pupil, who afterwards committed suicide.

Briefly put the story is this: Havant joined the Blériot school a week or two ago, and started his rolling practice, as is usual with pupils, by performing eccentric evolutions on the ground. He showed no aptitude as a learner, and consequently the school management wisely prevented him from getting off the ground by the simple process of removing the elevator flaps of the machine. This annoyed him, as he was full of the idea, common to many would-be aviators, that if he could only get off the ground he would be able to fly.

As is the custom at any aviation ground, he was a good deal chaffed about his performances on the ground, and this, with his lack of success, so worked on his nerves that on Saturday afternoon he apparently went mad and started shooting with a magazine pistol at the school officials.

He first shot at M. Norbert Chereau, the Blériot manager,

who was standing close to him, but, luckily, missed him, and then at Petitpierre, hitting him in the thigh, the bullet glancing up into his abdomen. After firing blindly at the others standing by, he turned the pistol on himself and put three bullets into his chest.

Havant was thought to be dead, and was covered over, while poor Petitpierre was attended to, but evidently he revived somewhat and got out a razor, with which he cut his throat. Both men were taken to hospital, where they died on Sunday.

Petitpierre was a great loss to aviation, for, though not an aviator himself, he was a most useful man. Always cheerful and pleasant to meet, he was one of the most obliging of school officials, and would put himself out to any extent to make things go smoothly for those with whom he had dealings. He leaves a young wife, who, it is feared, is but poorly provided for. On her account he would not take the risk of learning to fly, but his attachment to, and faith in, aviation was such that he would not leave the business and devote himself to a more lucrative profession, as, with his ability and charming personality, he very well might have done.

The whole grim business is only attributable to one of those outbreaks of hysteria, due to hot and trying weather, more common in warmer climates, and is a parallel to that powerful story of Kipling's in which one Simmons, a British soldier in India, shoots a room-mate because he is driven to desperation in the hot weather by continued chaff. Kipling says: "The Colonel said it was Drink, and the Chaplain was sure it was the Devil. But not a soul thought of comparing the 'bloody-minded' Simmons to the squawking, gaping schoolgirl with which this story opens." The writer has noticed signs of "nerves" for many weeks among even the more phlegmatic British aviators and their assistants, and it is only charitable to ascribe Havant's sudden dementia to a more acute attack than usual.

It only remains to congratulate M. Chereau on his escape, and to assure him that everyone who has met him, in or out of business, will join heartily in wishing that never again may he stand in such imminent peril as on Saturday last.

### A New Machine on the Market.

THE AEROPLANE noted recently the appearance of the Flanders monoplane, which has been making very satisfactory trial flights at Brooklands. This machine is now being put on the market as a regular article of commerce, and it is well worth investigation by would-be purchasers of fast monoplanes.

The standard machine is fitted with a 60-80 h.p. Green engine, and has, therefore, the advantage of being all-British. There can be no doubt about the staying-power of the engine, for it is the same type as that with which S. F. C. Gordon, of the Michelin Cup last December, and as that which was the only stationary-cylinder engine to get round the "Circuit of Britain," which it did without giving any trouble whatever. The price of the machine is considerably lower than that of monoplanes with Continental engines, and, as it is fitted with dual ignition, it does away with the dangerous operation of "propeller swinging"; in fact, the pilot can himself give the engine a few turns, get back into his seat, and start up on the switch without assistance.

The standard machine is a two-seater, but it can be had as a three-seater if required, and its speed is between 50 and 60 miles per hour, though a faster machine can be had at the same price, if desired. It is thoroughly well built throughout, for Mr. Howard Flanders has had very much more experience than most people in the trade of constructional work, and is as keen a critic of his own products as he is of other people's.

### Another Death by Drowning.

On August 16th, St. Croix Johnstone, who got his preliminary training on a Blériot at Beaulieu and finally won his certificate at Hendon, was drowned in Lake Michigan, his machine letting him down three miles from shore. All that is known at present is that he was driving a biplane, and as America does not possess any tractor-screw biplanes (O—P—2—1 type), the assumption is that he was driving one of the ordinary engine-behind, front elevator (or 1—2—P—2) type, and so was held down by his machine. In view of the demonstration of the safety of the engine-in-front machines, as given by Latham at Sangatte and Dover, Morison at Folkestone, and Captain Schwann at Barrow, we have here another argument against the old-fashioned type of biplane. Loraine's dip in Dublin Bay and Rougier's at Nice are no proof to the contrary, for Rougier was as nearly drowned as possible, and Loraine got out by letting his machine down backwards and thanks to being a fine swimmer.

## A German View of the Pilot's Position.

By E. W. COLVER.

I have much pleasure in sending you the plans and description of the "Dorner" machine, together with a translation of an article appearing in *Flugsport*, entitled "The Arrangement of the Pilot's Seat and Motor in Aeroplanes":—

### Dorner Monoplane.

This machine, a passenger-carrying monoplane of German design and construction, is still but little known. Herr Dorner is one of the few Germans who have studied aviation from its birth, and he has given much time to careful experiments.

The main planes have a span of 11.5 metres and a chord of 2.4 metres. The tail is non-lifting, with two semi-circular elevating tips. The landing chassis is of original design and very strong, and differs from the usual French types. A long curved wooden skid extends from tail to front of the machine, to which a wooden axle, carrying a pair of wheels, is fastened by two pairs of springs. In order to give the skid a smoother slipping surface, the underneath is plated with steel. The arrangement of the radiator, motor, and pilot's seat has been carefully thought out, so as to give a maximum of security with a minimum of resistance. The pilot's seat is situated under the main planes and behind the radiator and motor, usually a 24-h.p. Dorner. The three-bladed propeller, which is driven by cardanshaft and chain, is placed behind the planes and on a level with the same. The petrol tank is under the planes.

The control consists of a column working upon a universal joint and a pedal. The backward and forward movement of the column operates the elevators, the right and left movement the rudder; the pedal regulates the warping, and is duplicated for teaching purposes.

Since the fatal accident to Schenkel (June, 1911), the controls are being duplicated for safety. The Dorner machine holds the German height record, with a passenger of 1,600 metres. (The diagrammatic design appears on the opposite page.)

### The Arrangement of the Pilot's Seat and Motor on an Aeroplane.

"Aeroplane accidents have recently been criticised both by the lay and professional Press. In some cases the aviator has been crushed by the motor; hence the critics state that the motor should undoubtedly be placed in the front. In the accompanying drawings the most important differences in the arrangement of the pilot's seat and motor are shown.

"On the Farman (Fig. 1) the motor is situated directly behind the pilot. Should the motor, therefore, be thrown forward, the result might possibly prove disastrous to the pilot; but in many cases the pilot is thrown out of his seat before the motor breaks away.

"Curtiss (Fig. 2) attempts to shield the pilot by placing two extremely strong struts between him and the motor, so that they would impede it in its forward progress.

"The arrangement looks more dangerous than in the well-known Antoinette or Blériot types (Fig. 3). To be crushed by the motor after a forward dive is impossible, but after a backward slide the pilot might be seriously hurt.

"The over-turning of a monoplane is also dangerous. To shield against this there is generally a standard or, as in the Blériot, a triangular construction to break the fall. Equally safe is the placing of the seat in the body of the fuselage as in the Nieuport.

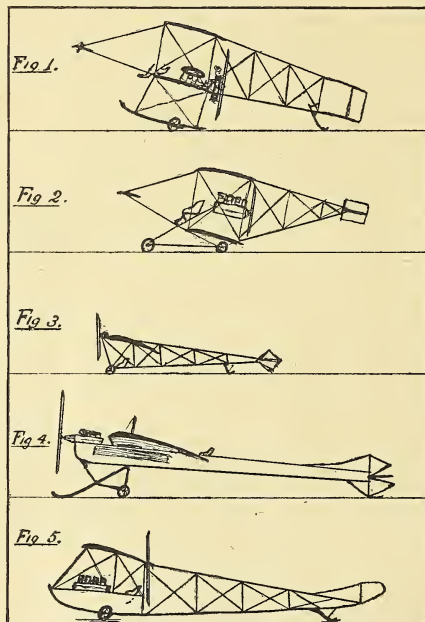
"At a glance the Santos-Dumont (Fig. 3) appears to be the safest. It is, perhaps, the best arrangement for a light machine with a small engine, but in a larger machine of this type many difficulties present themselves. In the event of this machine falling on its tail the motor would certainly fall in the direction of the aviator; moreover, with the pilot under the planes it is still more dangerous, as there are no struts, etc., to break the fall.

"At the present time the best arrangement appears to be the Dorner (Fig. 5) or de Pischoff machines. In these machines the motor is placed underneath the planes and before the pilot. In consequence of the centre of gravity being very much to the front, the machine would, after falling, attempt to turn a somersault, and the pilot be thrown on the planes, which being elastic should not prove so very uncomfortable.

"Even by this arrangement a catastrophe could easily occur were the machine to fall backwards from any considerable height. We, therefore, see that it is impossible so to arrange the motor, etc., that it is never dangerous.

"The only thing to do, therefore, is to keep the motor away from the pilot by strong construction, so that should the motor break a strut it would be turned out of its path. (It is here

taken for granted that the pilot is fastened in some way to his seat.) This method appears to be already recognised by different constructors (as in the Curtiss). Euler has constructed the fuselage of his machine (Euler-Voisin) so strong that the motor remains fast after a fall.



Diagrammatic sketches of the various types of machines, showing positions of motors.

"The time will come when we can land with safety after a fall of 5-10 metres, and when accidents through collision with obstacles when rising or landing will no longer be feared."

This article is really very interesting, although there are many little points with which I do not quite agree. In one of the German papers there is a long article on Schenkel's accident and its cause, which I have not yet had time to read, but should it prove of interest I will forward you a translation.

### British Aeroplanes in Russia.

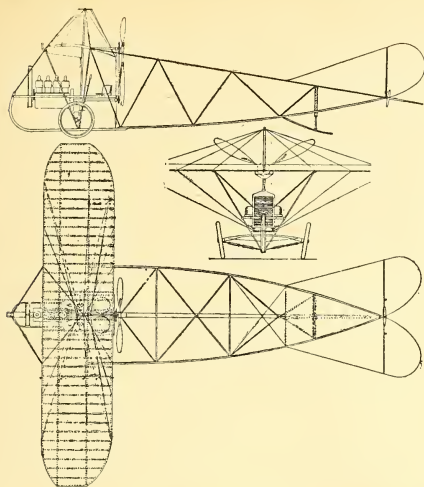
Another good piece of work has been done by Bristol, as is shown by a paragraph in the *Times* for August 16th.

It will be remembered that the Russian Government placed an order for nine Bristol biplanes for military purposes. Coming from a foreign Power, this order may be regarded as a testimonial to British workmanship, and that the Russians' judgment was well founded is evidenced by the paragraph in question, which reads as follows:—

"St. Petersburg, August 15th.

"Aeroplanes were used to-day for the first time in Russia in the Army manoeuvres. Leaving Gatchina this morning, two officers on a Bristol biplane reconnoitred the forces round Krasnoe Selo and returned to Gatchina with a detailed report, after covering a distance of sixty miles in one hour fifteen minutes, despite a strong wind and showers. Meanwhile other military airmen soared above Gatchina and watched their comrades' flight."

[Poor Times! It still has to write of "airmen."—Ed.]



Plan, side and front elevations, of the Danton Monoplane.

**The Danton Biplane.**

The accompanying rough scale sketches will give some idea of the design and proportions of the "Danton" biplane, a machine which is distinctly out of the ordinary, and flies extremely well—so well, in fact, that it was entered for the European Circuit, after having been put to severe tests at Juvisy, though for various reasons it did not start.

The planes are of peculiar shape and disposition; they are staggered so that the upper plane is behind the lower one, the connecting struts being inclined upwards and backwards, exactly the opposite arrangement to the Goupy, which has already proved its capabilities. In plan form they are different, but both are of the "arrow-head" form employed by Weiss and Dunne. The upper plane only is warped for lateral stability.

The fuselage is boat-built, with airtight compartments in case of a descent on water, and carries the motor on two steel bearers in front.

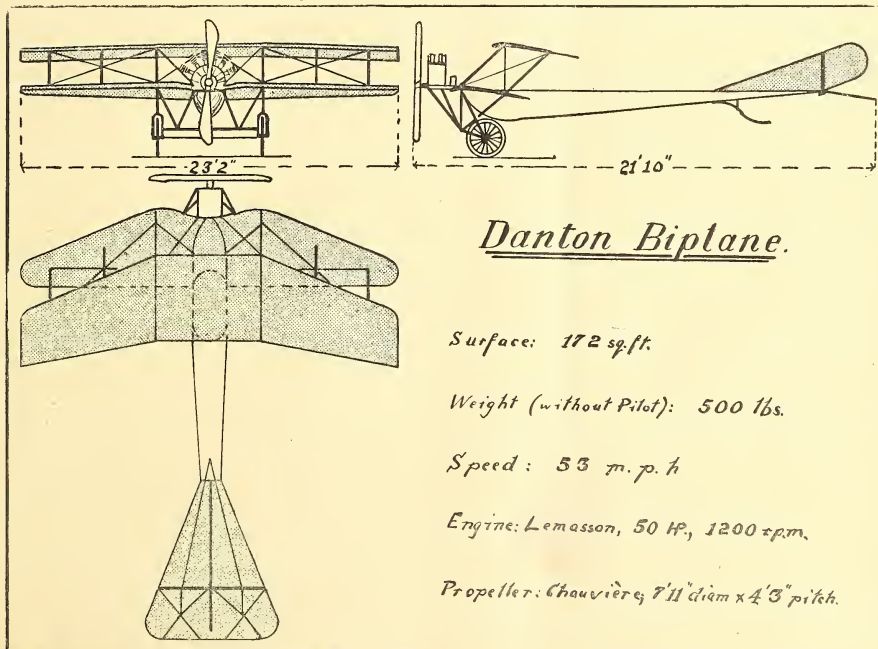
The pilot sits in a cockpit between the planes. At the rear is an empennage, or non-lifting stability plane, an elevator, and, above, a vertical fin and rudder.

The chassis is of wheels only, and is more or less of the Blériot type, which, as the centre of gravity is so far forward, should make it an awkward machine to land.

The power plant consists of a Lemasson six-cylinder semi-radial engine of 50 h.p. direct coupled to a Chauvière tractor-screw.

Altogether the machine is an interesting one, inasmuch as it has proved very successful under test, though its design is something of a law unto itself. There is a triangular empennage with a large elevator-flap. Above these are placed a vertical fin and a rudder.

THE AEROPLANE hopes, later, to publish accurate scale drawings of the machine, made, as all its drawings have been hitherto, from "life."

**Danton Biplane.**

*Surface: 172 sq.ft.*

*Weight (without Pilot): 500 lbs.*

*Speed: 53 m. p. h*

*Engine: Lemasson, 50 H., 1200 r.p.m.*

*Propeller: Chauvière, 7'11" diam x 4'3" pitch.*



## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

### The Observant Reporter.

Sir,—*Re* the article from *The Bystander* in your recent issue, I read: "If there was much wind the sweltering crowd was painfully anxious to know where the aviators discovered it." Personally, I wish they had *not* discovered it.

Certainly the writer of the article referred to was not in the 2s. 6d. enclosure on that afternoon, or he would not have asked *where* the wind was. It was *everywhere*, playing havoc with hats, wraps, and feathers, so much so that personally I preferred to sit on the ground *behind* a seat in order to get shelter from the row of people before me.

No one was surprised to learn that the race had been postponed for an hour; in fact, we were all expecting the news.

At 4 p.m. the wind was *quite* as bad as at 3 o'clock.

(Miss) S. WETHERELL.

### Those Engine Troubles.

Sir,—There are two points in Mr. Carrington Hide's letter which call for remark by me. These points do not concern the performance of the Green motor in the Circuit of Britain. With that matter I have already dealt in another place.

The first point that concerns me, however, is Mr. Hide's remark that I have a "passion for extolling the virtues and ignoring the faults of all foreign aviation products." It is really almost unnecessary for me to take the trouble to deny this, and it will suffice to say that the charge is quite groundless, and that no one who honours me by reading anything I write about aviation would dream of making it.

The second point is with regard to the Alexander motor competition. It is true that I stated that there were no entries; my statement, of course, applied to foreign as well as British motors. But my statement was based upon official information, which, through a clerical error, was circulated just before the list closed. Upon the fact being announced that there were eight entries, I immediately gave as much publicity to the good news as lay in my power.

Everyone who knows me knows very well that the British side of aeronautics is very much at my heart. Surely to point out failings should not bring me opprobrium. I have never given unstinted praise to the Gnôme engine, but to ignore the fact that, notwithstanding its comparatively great cost, it is the engine that is most used, and that has accounted for a very large proportion of the best flying, would be absurd.

Finally, everyone who knows me knows that I am British to the core, and that I have always given full credit to good British performances, those for which the Green motor has been responsible included.

C. C. TURNER.

### The Gnôme Engine.

Sir,—Whilst making a circuit at Brooklands on the 19th inst., at the height of about 60 feet, a loud report rang out, the machine—a Farman type biplane—shivered several times, and, as the engine stopped, I was forced to make a somewhat hurried landing. On looking at the engine, I discovered that one cylinder had been blown completely off, on account of the base stripping at the crank case, and that two more were damaged. The propeller also was badly chipped. I am very anxious to find out how often this has happened before, and what damage it has caused on such occasions. I understand that Lieut. Cammell had a somewhat similar experience with an engine of the same make.

J. L. LONGSTAFFE.

Brooklands.

### Crossing the Atlantic.

Sir,—I have been greatly interested in the correspondence and articles *re* "Crossing the Atlantic by Aeroplane."

Assuming, as does your correspondent Mr. Dean, that the nearest points of land are 2,000 miles apart, it would take a machine, flying at the speed of 80 miles per hour, 25 hours to cover this distance. This is by no means outside human endurance, though I admit it is approaching the limit. It will be remembered that S. F. Edge drove a car for 24 hours at an average speed of 66 miles per hour, which means that for the greater part of the time he was over 70 m.p.h. He, however, was able to indulge in periodic rests whilst tanks and tyres were seen to. With special training such as he indulged in it should, therefore, be humanly possible to stand the strain.

It is when we come to mechanical requirements that we foresee the greater difficulties. In order to attain the speed indicated above an engine of certainly not less than 70 h.p. will be required, and on that basis the following figures are obtained. Working on a most economical engine, 131.25 gallons of petrol and 18 gallons of oil will be required, weighing 950 lbs. and 200 lbs., and occupying 21 cubic feet and 3 cubic feet respectively.

The aeroplane itself, empty, would approximate to 750 lbs., and we should do well if the necessary tanks, piping, etc., came out at less than 120 lbs. Then the pilot would require some food and drink for a trip of this duration, to say nothing of emergency restoratives in case of sickness.

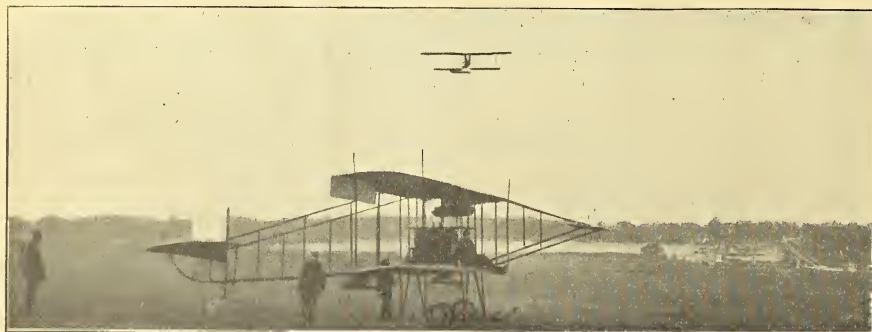
Suppose we allow him 25 lbs. Then the gross weight becomes:—

Machine	...	...	...	...	...	750	lbs.
Pilot	...	...	...	...	...	150	"
Fuel	...	...	...	...	...	950	"
Oil	...	...	...	...	...	200	"
Tanks	...	...	...	...	...	120	"
Food	...	...	...	...	...	25	"

Total ... .. 2,195 lbs.

or roughly one ton.

So that it resolves itself into the following problem: One would have to build a machine weighing a ton, loaded up; propel it with a 70-h.p. engine for 25 hours at an average speed of 80 miles an hour; and find a pilot willing and able to drive it.



The Bréguet at Brooklands getting up over Johnstone's Howard-Wright E.N.V.

It must be remembered that the above figures leave *absolutely no margin of safety*. If the pilot followed a dead straight line he would arrive absolutely without a drop of oil or petrol. I question, too, if a 70-h.p. engine could achieve this speed with so great a head resistance as such a huge capacity would entail, and if it be proposed to store fuel in the fuselage it would be a pretty proposition to consume it without upsetting the balance, and how about pressure feed from your rudder and tail tanks?

If, for safety's sake, we assume pilot and passenger with duplicate control, added weights entail other difficulties.

Also, if any leeway be made, it is "good-bye," though, to be sure, if petrol allows, a continent is rather hard to miss.

May I compliment you on *THE AEROPLANE*? It is a very readable paper, and one, at least, anxiously awaits its appearance each week; but it would be still more greatly appreciated if you could occasionally include some technical engine articles.

W. F. HOOPER.

[Engine articles will arrive in due course.—ED. AEROPLANE.]

### Flying at Hendon.

Sir,—With reference to the letter, "Flying at Hendon," signed by C. L. Wills, which appears in this week's issue, may I add just a word or two? Apparently he wrote from Merthyr Tydfil, so I presume he lives in that town. I, on the other hand, live in very close proximity to the aerodrome in question, and am therefore better able to criticise fairly Mr. Grahame-White's flying there.

For the last five months at least I have watched the doings at Hendon, and can assure Mr. Wills that the "positively hair-raising tricks" alluded to are very few and far between. Indeed, I have not seen more than half a dozen or so during the above-mentioned time. It is to be hoped that Mr. Wills (and, also, all who read his letter without knowing the whole truth) will not have the impression that Grahame-White, or anyone else at Hendon, does nothing but trick flights.

Again, he describes the "Baby" as "that unstable creature." This machine, flying over a crowd, would have a far greater chance of clearing the people (because of its speed) in the event of a mishap in mid-air than a slow and heavy Farman. That is why the "Baby" and not the Farman is used for these occasional "thrillers."

Once, however, when I was in the shilling enclosure, Comptrol Paterson flew the Farman past, 6 ft. off the ground, well within 15 ft.—plane tip to fence. It was quite safe, and he had perfect control.

As to Mr. Wills' suggestion that Mr. Grahame-White is "favoured" and thereby let off being suspended, it is the height of absurdity to make such an insinuation. But, nevertheless, Mr. Wills, this is meant merely for a friendly correction and a clear setting-down of continued facts.

With regard to other matters in this excellent paper, I should like to have the chance of personally thanking Mr. P. K. Turner for his invaluable articles which he is regularly writing in *THE AEROPLANE*. Nothing could be more plain, interesting, and attractive to those who, knowing little on the subject, desire to learn more.

Wishing your paper the success it merits,

ALFRED CURTIS.

Golders Green Road.

[Mr. Curtis appears to forget that these "thrillers," as he calls them, have usually been performed when there was a large crowd present, and the danger, therefore, all the greater. No one minds an aviator hurting himself if he wants to play tricks, but, for the good name of aviation, the public must be protected. The "Baby" is, scientifically, hopelessly unstable. She has a lifting tail, a front elevator, no dihedral angle on the wings, and the distance between the pilot and engine, which is above and behind him, is so great as to cause a big "moment of inertia" round the centre of pressure, therefore she is bound to be unstable, and her big speed only makes her the more dangerous, because if a slight error be made in controlling her she will travel so far before the error can be corrected.—ED. *THE AEROPLANE*.]

### Freak Models.

Sir,—For some time past the conviction has been dawning upon me that the model aeroplane is not playing the part it should in the development of aviation. The various model clubs scattered about the country are making no appreciable headway, and, sad to say, many of them have totally disappeared. Now, I contend that the aero model, if constructed on proper lines, can render inestimable service in the design of the full-sized machine. It can be used, *inter alia*, to demonstrate stability, efficiency, and new propeller types.

The present methods of rating in model competitions are two in number, viz.: (1) Surface, adopted by the Aero Models Association; and (2) weight, adopted by the Kite and Model Aeroplane Association. These methods positively encourage the building of models of the freak, projectile, and dart categories, and at the same time afford but a limited scope to the ingenuity of the conscientious inventor. The flying-sticks that one sees in such numbers at practically all contests are mere toys, designed solely to fly huge distances, and they cannot possibly render any service to the full-sized machine.

Only the other day I saw a model of 16 inches span fitted with two 12-inch propellers. This machine, two-thirds of the total weight of which consisted of rubber, was simply a projectile, and the sole object of its constructor—and one of which he boasted—was to beat a more scientifically designed model. I am quite aware that scale-models are not always practicable, but I do suggest that aero models in general ought to approximate more closely in general dimensions to their big brothers. One of the great arguments against the full-sized machine is its comparative inefficiency, 40 to 50 horse-power being frequently required to get one or two men off the ground. This can, I am convinced, be in a great measure overcome by improved plane and propeller design.

I am bold enough to suggest a new method of rating, i.e., combined weight of rubber and propeller diameter. Take one ounce of elastic and two 8-inch screws. Obviously, the competitors being limited in power, the machine that accomplished the best duration would be the most efficient. It has been asserted that distance and duration are themselves proofs of efficiency, totally regardless of the power applied at the start. If that be so, the most efficient flyer is the Lee-Enfield rifle bullet, which holds a distance record of over two miles, but we must also remember that this "one-ounce" model is impelled at the outset by a force of approximately ten tons, which is an even more palpable case of over-powerment than some of our leading freak machines. After all, it is not necessary to over-power racing models, for the machine holding the world's records of 2,535 feet distance and 87 secs. duration accomplished these feats with only a single ounce of rubber, less than a quarter of its total weight.

I contend that a better system of rating for models would not only encourage the numerous inventors who have sound ideas for increased efficiency in planes and propellers, but also relegate to their proper places those unscrupulous designers whose sole aim in model construction is to build freaks and projectiles for the sake of a mere cash prize. Almost anything will fly if enough power be crammed on and big enough screws be employed, but such designs can be of no possible benefit to the science at large. The only antidote to this degeneration of the clubs seems to be in a new and more scientific system of model rating.

ROBERT P. GRIMMER

(Gen. Sec. to the British Federation of School Aero Clubs).



Mr. R. P. Grimmer.

Master R. F. Mann.



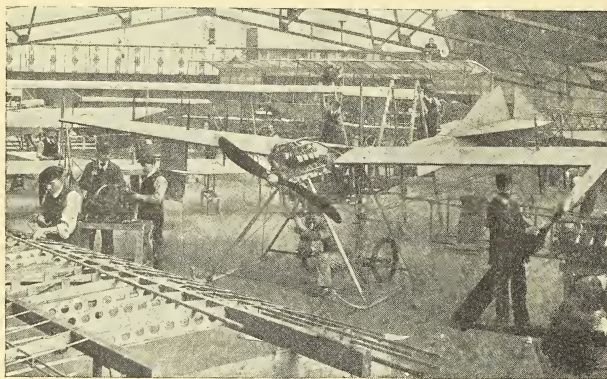
### Some Brooklands Changes.

The many friends of Mr. E. V. B. Fisher will be glad to hear that he has been appointed pilot to Vickers, Ltd., and is at present awaiting delivery of Vickers II., now that Vickers I. has departed in the direction of the South Pole. Capt. Wood's choice is undoubtedly a good one, for few people have as good an all-round knowledge of aviation as Mr. Fisher, who can almost pose as the "oldest inhabitant" of Brooklands, having taken up his abode when only the first row of sheds was there.

He was at that time engaged in the construction of the Neale biplane, and together with his friend, Mr. Howard Flanders, since turned constructor on his own account, put in an enormous amount of hard work on that machine. Afterwards he became interested in the Hanriot School, which is run by Mr. George England, and not only took his own certificate on the "Henrietta," as the Hanriot monoplane is usually called, but passed several other good flyers for their

### Where Good Work is Done.

One of the nicest workshops the writer has yet come across is that of Mulliners, Ltd., at Vardens Road, Clapham Junction. The building was originally a skating rink, and quite a modern one at that, so that the whole place is in splendid condition, well lighted, well ventilated, and with a fine level floor, which must facilitate accuracy in assembling machines. Mr. A. G. Leeper, who is in charge, will be remembered by many of those interested in aviation as chief mechanic to the late Hon. C. S. Rolls, and he has certainly had as much experience of building aeroplanes as anyone in the business. That this is so is shown by the good quality of the work which is now being done at Mulliners, and he is materially assisted therein by the fact that Mulliners, being one of the oldest established firms of coachbuilders in the country, can command a supply of workmen who are used to working in a combination of metal and wood.



A general view of the main shop at Mulliners. On the right with the propeller is Mr. Leeper, the manager. The machine in the middle is the Skinner monoplane.

certificates, including Mr. Dolphin and Mr. Gordon Bell, the latter now being chief pilot of the Deperdussin School, thus showing that he is not only a very capable flyer himself, but that he has the makings of an excellent instructor.

His place at the Hanriot School has been taken by Mr. H. Petre, usually distinguished from his big brother, "Peter the Painter," by being known as "Peter the Monk," who is himself one of the earliest shed-holders at Brooklands. Mr. Fisher should be able to do himself full justice on the Vickers, for he will not only have a fast and solidly-built machine, but he will have one of the finest and most reliable engines in the world with which to do his work.

### Something to Read.

From Messrs. Crosby, Lockwood and Son comes a revised and enlarged second edition of *The Art of Aviation*, by Mr. R. W. A. Brewer. The book contains a large amount of exceedingly interesting information on the subject of aeroplanes, and is excellently produced, the illustrations being particularly good. On certain points Mr. Brewer has decided opinions of his own, with which one might perhaps argue if one had space, but he is, of course, entitled to his opinions.

A useful addition to the book is a table of aero engines made up to the end of the year 1910, giving the chief dimensions and weight of each. There is also a useful comparative table of loading per square foot, weight per horse-power, aspect ratio, and speed of a number of well-known machines up to the beginning of the present year; and there are good tables of conversion of pounds to kilograms, speeds from miles per hour to feet per second, and so forth.

Added to the book as an appendix are ten excellent plates, giving scale drawings of well-known machines, and, finally, there is a table of aeroplanes of 1910 giving the measurements and other particulars of no less than sixty-six different machines. In the computation of these figures, and in the general review of the book, Mr. Brewer was assisted by Mr. F. T. Neufingham, one of his assistants, to whom he chivalrously expresses his thanks.

turned out by Mulliners.

Mulliners are British agents for the famous Normale propellers, used by Lieut. de Conneau in his great series of victories, and they have recently placed by their credit the 5 and 10 km. world's records, made by Hamel at Eastchurch.

### The Visitors' List.

Mr. Compton Paterson, fresh from the Liverpool strikes, came in on his way to fix up a new aviation scheme he has in course of construction.

Signor Mario Arioli, up from Cardiff, was busy making his arrangements for the projected flights from Cardiff to Weston-super-Mare and back.

Lieut. Park, R.N., informed THE AEROPLANE that the Sanders biplane was again approaching completion, and was about to be moved to a more suitable ground than at Beccles.

Mr. C. C. Allport, founder of the Conisboro' Aeroplane Society, came in to discuss the possibilities of joining one of the aviation schools, and described the club's glider, which has been providing useful education for the members.

Lieut. H. E. Watkins reported the delay of the departure of "Vickers I." for Australia owing to the strike at the Docks. Watkins' suggested method of dealing with strikes would probably not be appreciated down Limehouse way. It is to be hoped that the South Polar penguins, which he proposes to train to hold on to his tail when starting, and the Polar bear which is to act as propeller swinger will not feel called upon to go out on strike after having been taught their business.

Mr. E. de B. Whittaker, up from Eastchurch, gave the following account of his smash. He had been using a Green engine in his machine, but was at the moment trying a Gnôme. This meant that instead of 350 lbs. at the centre of gravity he had a load of 150 lbs. about two feet behind it. The extra loading on the tail had apparently no effect in



# IMMEDIATE DELIVERY.

## 400-500 YARDS.

Complete set of parts for building

### No. 3 "Aerial" Twin Propeller Racing Model

including all necessary Wood (planed), Main Aerofoil, Aluminium Elevator, Straining Wire Turrets, Rubber, etc. Finished Varnished Birch Propellers, Protecting Skid, full Instructions and Drawings.

**Post free 2/9**

We have been requested by numerous customers to design a more advanced Set of Parts and have pleasure in bringing to the notice of our Friends our

### AT-17 Set

which, we feel certain, will meet a long-felt want for a model that will rise from the ground under its own power (not pushed), and after a long and steady flight will land lightly on its chassis. The set contains all necessary wood, finished propellers, material for aerofoils and chassis. Complete drawings and instructions. Securely packed in strong wooden box. Length 3 ft. 2 in. Span 2 ft.

**Post free 4/9.**

Mr. F. PHOLE, Lancing, Sussex, writes:—"I cannot help writing to you and expressing how delighted I am with A.T. 17 sets received yesterday. I built the machine in forty minutes, and got some graceful flights. It is really very pretty to see the No. 3 Aerial and the A.T. 17 in the air together. I am trying to get a good photograph of them flying together, and will send you one. A great point in the A.T. 17 is the graceful manner in which it lifts from the ground, which is very pleasing."

Look out for our Steam and Petrol Model Engines, weighing from 2 ozs. complete with propeller.

*More Testimonials next week.*

## THE AERIAL ENGINEERING WORKS, BALHAM, LONDON, S.W.

Telephone: Battersea, 1900.

Telegrams: "Supplying," London.

A B C Code, 6th Edition.

## AVRO PROPELLERS

of proved efficiency.

A 35 h.p. Green "Avro" biplane carries passengers with ease for lengthy periods when fitted with the **AVRO PROPELLER.**

YOUR AEROPLANE WILL GIVE EQUALLY GOOD RESULTS IF YOU FIT IT WITH AN **AVRO PROPELLER.**

**A. V. ROE & CO.**

The Aviators' Storehouse,  
Brownsfield Mills, MANCHESTER.  
*We make a speciality of Oxy-Acetylene Welding.*

## CLIFT AERO MAPS

Used in the "CIRCUIT OF BRITAIN"  
and all Cross-country flights.

Clift Maps were used by Vidart, Kimmerring, Valentine and others in the European Circuit, and by the majority of flyers in British Circuit.

## Clift Aero Compasses

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators. Necessities for the  
**"CIRCUIT of ANYWHERE"**

For terms, write—  
**Eric Clift,** c/o "The Aeroplane," 166, Piccadilly, W.

THE NEW TYPE B

## VALKYRIE MONOPLANE

HAS NOW BEEN TESTED AND HAS  
PROVED AN UNQUALIFIED SUCCESS

**Especially designed for Military Service.**

THREE TYPES: 40-80 miles an hour.  
From £280.

ALL THREE TYPES FLYING DAILY AT HENDON.

*Tuition Free to Purchasers. Particulars on request.*

## THE AERONAUTICAL SYNDICATE

Est. blished March, 1909,

LTD.,

At the Flying Ground, Collindale Avenue,  
West Hendon, N.W. (<sup>6</sup> miles from the  
West End)

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

calm, but a gust lifted him suddenly, and, in spite of all his efforts, he could not get the nose down. The machine lost all way and dived to the right. Mr. Whittaker, just as the right wing-tip touched, had the presence of mind to lift up his feet and roll himself into a ball. This undoubtedly saved him, as no trace whatever could be found of the extension on which his legs had been resting. His actual injuries are: Right forearm broken in three places, right ear and eye cut, and a cut on the forehead.

Mr. Moorhouse called to describe Mr. Morison's descent in the sea at Folkestone. He said that the machine was started from a field on top of the cliff and the engine stopped just as it cleared the edge of the cliff. Mr. Morison had the choice of landing in the street at Sandgate or coming down in the sea, and he wisely chose the latter. The machine was actually floating for three hours, and, when hauled out, was absolutely undamaged. It would have sustained no injury at all only that, as it left the water, it was jerked up suddenly on to the shore, and the weight of the water which had penetrated into the wings broke the ends of the ribs and the back spars before it was possible to split the fabric and let the water out. The machine actually belongs to Mr. Moorhouse, and as soon as it is repaired at the Radley works at Huntingdon Mr. Moorhouse will have for his certificate on it.

Lieut. Porte, R.N., came in to discuss the prospects of aviation schools. He is very well satisfied with the progress of the Deperdussin school, and said that they had already got quite a number of pupils booked, including the youngest flyer in the world, a naval cadet named Robinson, fourteen and a half years of age.

Mr. Charles Hubert came from Hendon, where he has been successfully training Lieut. Dahlbeck, of the Swedish Navy, for his certificate. Mr. Hubert is one of our steadiest and most capable biplane flyers, but says he has now had enough of the engine-behind machine, especially after his two smashes on the big military machine at Hendon, and he is now going to fly the monoplane.

Mr. Hamel called to discuss his projected flight to Southend with the special edition of a well-known evening paper, arranged by the Universal Aviation Co., Ltd. It was his intention to fly along the river, which he was to join at Hammersmith from Hendon, thus flying through the heart of London. If flying through London be safe for anybody, it is certainly safe for Mr. Hamel, but, none the less, as was pointed out in THE AEROPLANE some weeks ago, there is always the possibility of an engine stopping, or shedding a cylinder, and a descent in the river, even without harm to the aviator or anybody else, would not be a good advertisement for the sport. It turned out afterwards that Mr. Hamel ran into a heavy thunderstorm at Hammersmith Bridge, and thought the rain was fog till he ran into it, and had his face badly whipped by it, so, turning round, he made a run for it, beating the storm to Hendon by about four minutes. He told THE AEROPLANE afterwards that just before meeting the storm he had some very bad gusts and drops in the disturbed air travelling in front of the body of the storm.

Mr. Richard Wickham, just returned from Canada, where he had been digging for gold without discovering any particularly adhesive qualities in that metal, told weird tales of storm, fire, and flood, including a story of floating on a log in a lake for an hour and a half watching the town of Porcupine burn up his belongings. He describes the Canadian language as even more expressive than English.

#### More Opinions.

The Spiral Tube and Components Co., King's Cross.—"We agree with a remark made by a correspondent to your paper the other day, viz., that yours is the best aeroplane paper!"

Mr. F. Spies, Liège.—"Your paper, THE AEROPLANE, is very interesting indeed. I read it regularly with an even pleasure."

G. R. Noel Shaw, Liscard, Cheshire.—"I am delighted with your paper; it's so sporty and full of good, sound news. Good luck!"

James M. Burke, Glasgow.—"I consider it is the finest and most go-ahead journal dealing with aviation which we have. Good luck to you and your enterprise."

Captain E. M. Mailland (The Air Battalion).—"Wishing you every success with your most excellent paper."

Miss M. J. Elliott.—"My sincerest thanks to you for bestowing such a paper as THE AEROPLANE on a dull and selfish world! It is most helpful and instructive, and delightfully funny."

Mr. Philip Harris, Blundellsands.—"A friend of mine recently brought to my notice your excellent paper, THE AEROPLANE. I think that a first-class paper on this subject has been wanted for some time."

Captain Clayton, Mansfield.—"Best wishes for the success of your charming little paper."

Mr. Eric L. Dower (President, Brighton District Aero Club).—"I feel I must write to add my congratulations to the others on your excellent paper, THE AEROPLANE. It is read extensively throughout our club, and is of great value to every enthusiast. For the best report about anything connected with aviation, or for any inside information, no one can do better than read your paper."

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AILRON, London.

Telephone: Mayfair 6407

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM		ABROAD	
3 months, post free	5 6	3 months, post free	2 9
6 " " "	3 3	6 " " "	5 6
12 " " "	6 6	12 " " "	11 0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

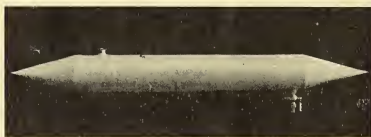
Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.

# DAVISON

## REMEMBER THIS NAME

When  
requiring  
Aeroplane

**TANKS** (in brass, copper, oxy-acetylene welded steel, or other metals,  
**RADIATORS**  
**REPAIRS**  
**OXY-ACETYLENE WELDING**



Best known manufacturer of these specialities in the motor trade.

Quotations free for oxy-acetylene

:: :: repairs or other work :: ::

**A. C. DAVISON,**

163, Arlington Road, Camden Town, London, N.W.

# £650

## The Flanders Monoplane

(TWO OR THREE SEATS).

60-80 Green Engine ("Circuit of Britain" type).  
50-60 miles an hour [L. Howard Flanders, Brooklands, Weybridge].

### Miscellaneous Advertisements.

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion. For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted **ONLY**—18 words **1/-**. 1d. per word after.

### MACHINES.

**FOR SALE**, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

BLERIOT cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

**MACHINES.**—'Avro' Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

### ENGINES.

**60-80** H.P. E.N.V. ENGINE. Absolutely new. What offers?—A.M., 58, Brocklehurst Street, New Cross, S.E.

**50** H.P. ALVASTON ENGINE, perfect condition, fresh from makers'. Replacing by more powerful type. £50 for quick sale.—MALLOWS & Co., Adelphi House, Strand, W.C.

### PROPELLERS.

**PROPELLERS.**—'Avro' Propellers of proven efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results guaranteed from other engines.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**CHAUVIÈRE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD and PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### EMPLOYMENT.

**WANTED**, Certificated Pilot Aviator as instructor Blériot and Farman. Salary and 50% all earnings. 3 months' certain engagement. State lowest terms and full particulars. SCHOOL, c/o AEROPLANE.

**CERTIFICATED PILOT-AVIATOR**—experience of six types—desires any opportunity for amateur flying, experimental or standard machines.—"AMPHIBIAN," c/o THE AEROPLANE.

### TUITION.

**TUITION**, with or without limited liability, on Blériot XI, personal instruction.—CHANTER, Aerodrome, Hendon.

**TUITION**.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. More certificates have been secured on the Avro than on any other "All-British" Aeroplane.—A. V. ROE & Co., Brownsfield Mills, Manchester.

### TUITION—Continued.

**L**ANARK AERODROME, Lanark, N.B.—Tuition by Certificated Aviator on genuine Blériot Monoplanes: Passenger Flights and Flight Exhibitions.—Terms on application to W. H. EWEN.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

### INVESTMENT.

**W**ANTED gentleman with £2,000 to start aviation scheme. Good security, sound business with sure success. No wild-cat scheme. Suit gentleman interested in aviation. Apply Box 330, THE AEROPLANE.

**G**OOD Business in Models and Aeroplane Parts for Sale, in Midland town. Excellent connection. Owner moving to London. Replies to Box 326, THE AEROPLANE.

### MISCELLANEOUS.

**"MANN" MONOPLANE**—the model that is neither freak, projectile, nor dart. Are you going away for a holiday? Why not astonish the local bovinies by the spectacular flights of a "Mann" Monoplane? Order a guaranteed quarter-miler and take it with you, 15/- brings it post free, well-packed, and with full directions. Materials and instructions for building a "Mann" Monoplane, 5/- post free; "Mann" geared winders, 5/-; "Mann" propellers—marvels of efficiency—3/6 per pair. Canadian agent: MacWilliams, 696, Furley Street, Winnipeg; French agent: Gache, 26, Avenue Gambetta, Angoulême; Sole manufacturers: WILLIS BROS., 14, Wellington Square, Hastings.

**S**ECOND-HAND BAND-SAW, splendid condition, Tilting Table, Fences, etc., for hand or power. £5.—MALLOWS & Co., Adelphi House, Strand, W.C.

**JUST PUBLISHED.** Second Edition, Revised and Enlarged. Demy 8vo, cloth. 294 pages with numerous illustrations and dimensioned Drawings. 10s. 6d. net.

### THE ART OF AVIATION:

A Handbook upon Aeroplanes and their Engines, with notes upon Propellers.

By R. W. A. BREWER, A.M.Inst.C.E., M.I.M.E., Member of the Institute of Automobile Engineers.

London: CROSBY, LOCKWOOD & SON, 7, Stationers' Hall Court, E.C., and 121a, Victoria Street, S.W.

**E**TRANGERS, qui aimez la langue française et l'aviation, abonnez-vous à

### LA FEUILLE SPORTIVE

2 fr. par an, France; 3 fr. par an, Etranger. Directeur: M. Gache, Professeur du Lycée Carnot, 5, Rue Salneuve, Paris.

**P**HOTOGRAPHS.—Original photographs of most of the illustrations in THE AEROPLANE can be supplied at short notice, half-plate size 1s., postcard size 6d., from THE AEROPLANE, 166, Piccadilly, W.

**P**OSTERS.—To promoters of exhibition flights; aviators giving exhibitions on their own account; aerodrome proprietors, &c.—Striking posters in large and small sizes can be supplied in a day or two by arrangement with THE AEROPLANE, 166, Piccadilly, W.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.]

THURSDAY, AUGUST 24th, 1911

No. 12.

## "BRISTOL" AEROPLANES ARE RELIABLE .. and STRONG.

Write for particulars of

THE "BRISTOL" MONOPLANE  
TYPE "P"; and

THE "BRISTOL" BIPLANE  
TYPE "T."

LEARN  
TO  
FLY

... at the ...

"BRISTOL"  
FLYING  
SCHOOLS

AT

SALISBURY PLAIN and BROOKLANDS.

They have the Finest Equipment and most  
Expert Tuition Staff in the Country

AND THUS

ENSURE RAPID PROFICIENCY.

SPECIAL TERMS TO NAVY AND ARMY OFFICERS.

Full particulars will gladly be furnished by—

The British & Colonial Aeroplane Co., Ltd.,  
FILTON, near BRISTOL.

"THE AEROPLANE," AUGUST 31, 1911.

# THE AEROPLANE

1<sup>st</sup>  
WEEKLY

Edited by CHAS. G. GREY. ("Aero-Amateur")

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, AUGUST 31st, 1911.

No. 13

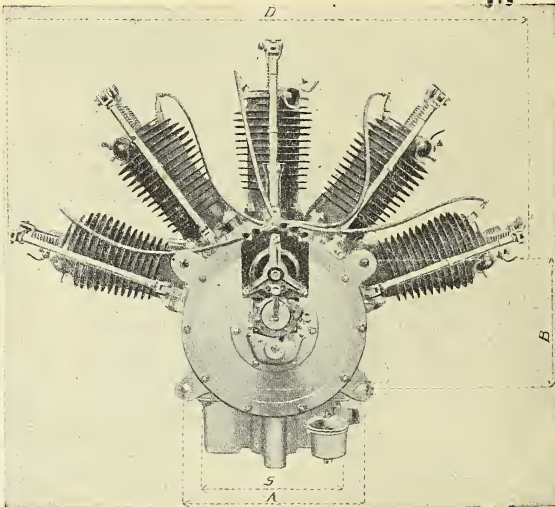
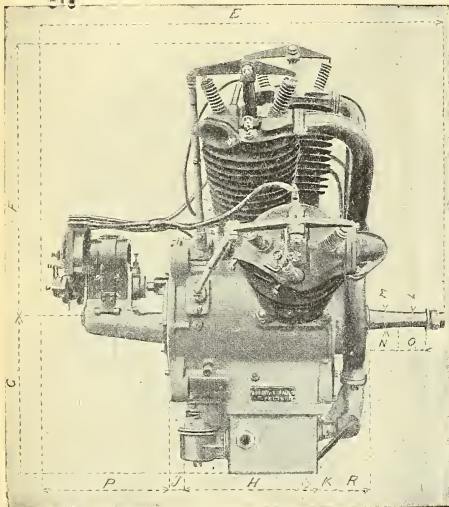
## The Record Breaker.



Gustav Hamel, the crack monoplane flyer, who holds the 5 and 10 kilometre World's Records, on his Blériot, and who has designs on height records.

SMITHSONIAN INSTITUTION OCT 27 1959

# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

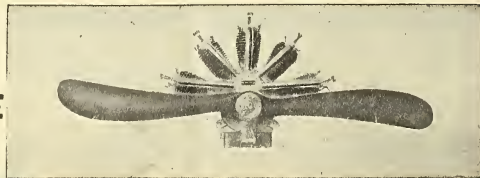
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL OPINIONS...	291
AIR CURRENTS ...	296
AERONAUTICAL RESEARCH ...	298
"A MEAN ADVANTAGE" ...	299
THE WEEK'S WORK...	300

	PAGE
ANOTHER MICHELIN PRIZE ...	303
SEVEN HUNDRED MILES IN THE DAY ...	304
THE TRAIN MONOPLANE ...	305
CORRESPONDENCE ...	306
THE VISITORS' LIST ...	308

## Editorial Opinions.

**Aerial Tomfoolery.**

Aviation, like other new things, is bound to suffer to a certain extent from its friends, or, at any rate, from people who profess to be its friends, in that people who wish to advertise aviation (and with it themselves) are rather apt at times to do things which are likely to bring the sport into ridicule or disrepute.

One of the most notable examples of this is the proposed "aerial post," as it is called by the daily papers, which certain ingenious gentlemen hope to run between the Hendon aerodrome and Windsor Windsor presumably being selected in preference to Hackney Marshes, or other salubrious spots, in order to give the promoters an excuse for dragging the King's name into their advertising scheme. The King has already recognised the existence of aviation by receiving Mr. T. O. M. Sopwith's visit, so what more is necessary until he sees fit to assist in person at an Aero Show or at some official function of the Royal Aero Club, or at a big competition?

What good purpose can be served by this performance is very hard to comprehend, for there does not seem to be any particular reason why any sane person should be consumed with a desire to post a letter in London, at one or other of certain big general stores, in order that the said letter may be transported by horse-cart to the Hendon aerodrome, taken thence to Windsor by aeroplane, and brought back again to London by the ordinary methods of the Post Office, so that it may be, after all this delay, delivered to its destination by the humble but necessary postman.

Great play is made with the idea of a "special post-mark," and with the fact that special postcards and envelopes on sale at the shops of various enterprising purveyors will bear a "copyright design of Windsor Castle printed in either brown, green, or red."

There are various other entertaining little points about the whole programme which might, perhaps, commend it to some few people of infantile intelligence, but, taking the whole idea by and large, it can only be described as a piece of futile tomfoolery which cannot possibly do any good to aviation, and may quite possibly lead a number of foolish people to believe that the aeroplane is not so efficient a vehicle as it really is, because, owing to the weather conditions, it will quite likely be impossible at the period of equinoctial gales to give the letters sent by this ridiculous process the daily airing which is promised by the promoters of the scheme.

The only pity is that aviators of good repute should be tempted by the opportunity of advertisement, and presumably for monetary considerations, to lend themselves and their machines for mere circus-tricks of this kind. Why leading papers should devote space to this class of performance, when they ignore really fine flying such as is daily taking place all over the country, is one of those things "no fellow can understand."

It is understood that the net profits derived from the "new service," as its promoters are pleased to call it, will be devoted to a public charity to be approved by the Postmaster-General. It is to be hoped that the expenses of the performance will not consume all the proceeds, in the manner so delightfully portrayed in Mr. Pellissier's burlesque of a "Music-Hall Benefit Matinée."

Prospects of aviation at the present moment are considerably brighter than they have ever been, thanks very largely to the fact that the Services are waking to the possibilities of the aeroplane. In consequence, officers of both the Army and Navy are joining various aviation schools in this country in quite considerable numbers, and the number of inquiries from officers who wish to take up aviation is increasing more rapidly still.

In fact, it seems very probable that, long before the War Office has made up its mind how much money it is going to allot for the purpose of training the eighty to a hundred officer aviators it requires, more than that number will have taken their certificates at their own expense. Some of them, of course, are doing so in the hopes of getting their money back, or, at any rate, a portion of it, when the Air Battalion is enlarged, according to Colonel Seely's promise, but by far the larger number are learning to fly partly for the sport of the thing and partly because, as some of them have remarked to the writer, one never knows when it may come in useful on active service.

This is quite a sensible point of view, because, under the chronically penurious system of the War Office, it is highly probable that air scouts will be attached to various commands on active service in entirely inadequate numbers, and the officers so attached might very well be laid up, quite apart from any injuries received in the course of their proper vocation, and so a commanding officer might find himself with aeroplanes but without pilots. Then, of course, the officer aviator who did not belong to the Air Battalion would have his chance; and,

besides, it would very probably happen on active service that aeroplanes belonging to civilians might be commandeered and put into service by such unofficial aviators, so that taking it all round every soldier who learns to fly at present is acquiring what may prove, before long, to be a very valuable asset in his military equipment.

As regards the Navy, it is, by now, a recognised thing that the Admiralty, especially in mechanical matters, is slower to move than the War Office, though, as a rule, it does not make such idiotic mistakes. Aeronautically, it has been, if possible, even more idiotic than the War Office, because of the money it has spent on the gas-bag at Barrow; but, in the matter of aeroplanes, it has certainly been more cautious, in that it has as yet bought nothing at all, and has had all its elementary tests carried out for it by private charity, instead of, as in the case of the War Office, paying civilians to spend money on absurd and homicidal experiments.

However, there is no doubt that the Navy before long will also have to institute a proper aviation branch, and those naval officers who are at present learning to fly will, if they have a little influence behind them, be able to reap the benefit of their enterprise.

In sporting matters of all kinds the Services more or less seal the fashion, if they do not set it, and, therefore, it is safe to assume that as soon as the well-to-do youth of the country realises that flying is being largely taken up by both Services there will be a rush of civilians to join the schools. A certain number will merely learn to fly, but quite a large number will buy machines also, especially when the price goes down somewhat, as it already shows signs of doing.

Even now there are quite a number of really sound inquiries about from men who are genuine buyers of aeroplanes, and, given a fair share of moderately calm weather during the autumn and early winter,

the trade as a whole ought, in six months' time, to be in quite a healthy state after all the vicissitudes through which it has passed during the last few months. And, if only the necessary capital be forthcoming to give the various small but good constructors an opportunity of doing their work on a somewhat larger and, therefore, cheaper scale, there ought, even without the much-needed help of the War Office, to be something like a sound industry by next year.

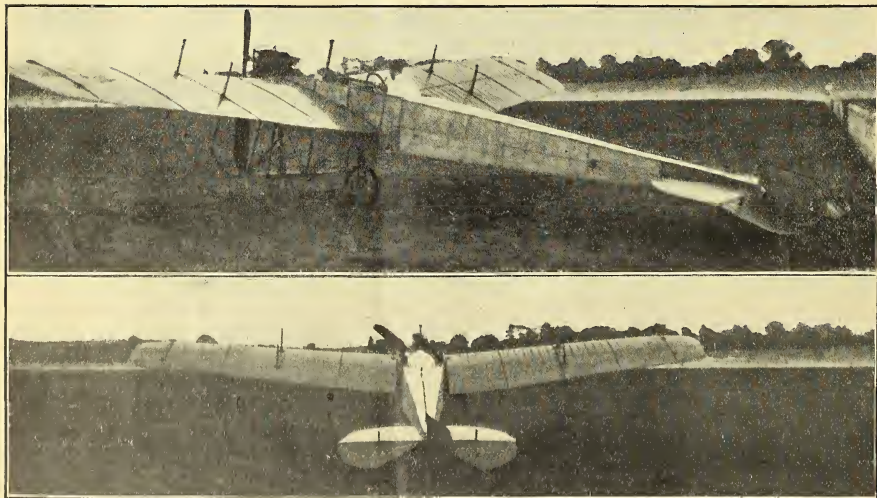
#### Hydro-Aeroplanes.

Quite a number of people at the present moment, both here and abroad, seem to be experimenting with hydro-aeroplanes, with more or less success. The hydro-aeroplane, even more than the ordinary aeroplane, needs to be divided into two distinct classes, for Service and civilian use.

The civilian's hydro-aeroplane will, of course, be quite satisfactory if it be capable of rising from and returning to smooth water; and if it can be built, as in the case of the Voisin-Canard, to alight and start from the land as well, it will make quite an amusing vehicle, for it would doubtless be a most entertaining pastime to start from an ordinary aerodrome and fly about over one of the larger lakes without any fear of ruining the machine if one came down in it, and for transport work across estuaries such machines would really have great practical use. For port defence work, also, such machines would be of considerable value, for they would be fairly well sure under ordinary conditions of having harbours from which to start and in which to alight.

The genuine naval aeroplane is, however, quite a different proposition, for, to be of real use for scouting purposes in time of war, it must be capable of working in weather conditions which are uncomfortable even on board ship.

For this reason it is absurd to suppose that the naval aeroplane is going to start from the water, for even the present-day aeroplane can fly quite comfort-



The new Flanders Two-Seater Monoplane at Brooklands. Mr. Petre (generally known as "the Painter") at the wheel.

# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz. :

35 h.p.	*60 h.p.	100 h.p.
---------	----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

The E. N. V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESSEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evotsyn," London.

## HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



Eight Types

### Monoplanes

From 40 to 80 miles per hour

### Biplanes

From 36 to 50 miles per hour.




Catalogue on Application.

Winner of De Forest Prize



# Universal Aviation Co., Ltd.

166, PICCADILLY, W.



**BIRDLING**

Monoplanes

Biplanes

Belts

Fabric

Revolution Indicators

Aneroids, etc.

Tools, etc.

AGENTS FOR

## The A.B.C. Engine.

(See advt. on this page next week for full particulars.)

Motor Accessories of all kinds, including:

J. M. Shock Absorbers

Bobbett Tyre Levers

Petrol Can Clips

Stowaway Jacks

WRITE FOR LEAFLETS.

Telegrams: "Birdling."

Telephone: 3504 Gerrard.

ably in a 30 to 40-mile-an-hour wind if that wind be moderately steady, as it usually is over the sea, and the 30 to 40-mile-an-hour wind incidentally raises a sea which would smash a Voisin-Canard into matchwood as soon as it touched it. Further, it would appear to be a practical impossibility to design any form of aeroplane which will not be knocked to pieces if it comes down in anything like a seaway, and under such circumstances it is obviously absurd to suppose that any machine is going to try to rise off the water.

The naval aeroplane of the future is going to be launched from the deck of the ship, or rather from a special launching apparatus erected on the deck. It will be rapidly accelerated by some launching mechanism, probably hydraulic, but in its effect analogous to the old launching mechanism used by the Wright Brothers for their first machine. It will be remembered that when Ely tried to fly off the deck of an American battleship he dropped badly at the start and damaged his propeller, and this although the ship was standing still in calm water.

When the naval air scout is launched under Service conditions he will have to start from the deck of a ship which is probably pitching and rolling badly, and his only chance will be to be shot off at the right moment as the bow of the ship rises head to wind.

His return, of course, is another matter. Some people, quite as unpractical as those who believe in getting off the surface of the water, expect the aeroplane to return to the deck itself. This, as we know, has been done in America, also under perfect conditions of calm. As a matter of fact, what will really happen will be that, on returning, the air scout will bring his machine down into the water as

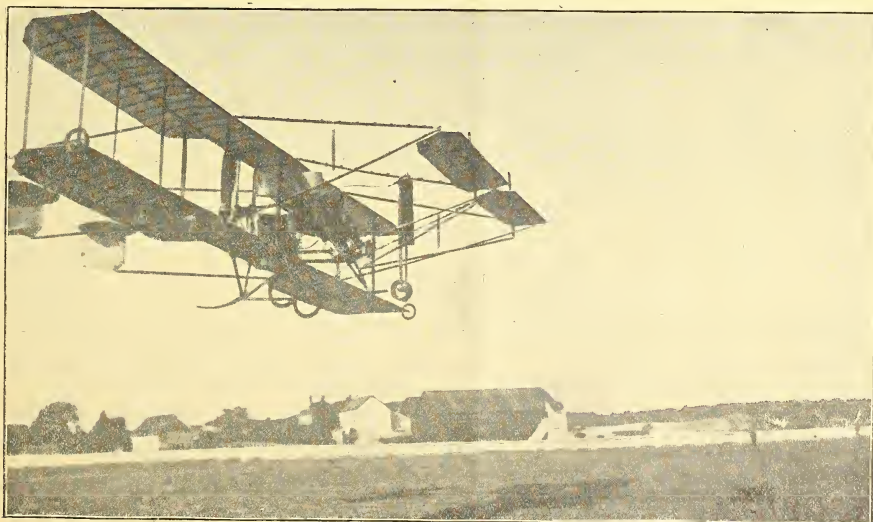
near the ship as possible, and will be hauled on board as best may be. It is, however, quite easy to design a machine, say something on the lines of the Nieuport, with the whole fuselage composed of watertight compartments, which will come down into the water "all anyhow," and will, at any rate, float till it is picked up.

We know that the ordinary monoplane of to-day will float in a calm sea, but the least lop would smash the wings up and the machine would then sink. It, therefore, becomes necessary to have an unsinkable body, and then the wings can look after themselves. After all, wings are fairly cheap, and quite a number of aeroplane wings can be bought for the price of one 12-inch shell, so that, if the fuselage of the machine and the aviator can be saved, the information he has obtained ought to more than pay for the cost of a new pair of wings; and naturally every ship which carried aeroplanes as part of its equipment, as every ship will have to do before long, would carry probably twenty or thirty pairs of wings for each fuselage, and could do so with the greatest of ease.

Therefore, it seems fair to assume that though people who are out to produce hydro-aeroplanes are certainly doing good work, and will ultimately produce quite an amusing pleasure vehicle, which, incidentally, may have quite a good deal of general utility as well, for genuine naval work with the fleet at sea the hydro-aeroplane, as at present understood, is not worth troubling about.

#### Aeroplanes in Torrid Climates.

Captain Sido, of the French Army, has recently been experimenting with aeroplanes in Senegal, and has come to the conclusion that the present day aeroplane is useless for work in Africa in that "sand is the avowed enemy of aviation." The heat renders it impossible to fly with the ordinary machine of to-day, and wooden propellers will not stand the climate.



Cody, and his boy passenger Booth, rounding the sheds at Brooklands in the Manville Prize Competition.

## AIR CURRENTS.

## The Race.

(WITH APOLOGIES TO THE SHADE OF WALT WHITMAN.)

Allons!  
In other words, let me go forth!  
Not first,  
Or second, or third,  
For which, under the rules of the great, the noble, the  
omnipotent R.Ae.C.  
I should probably be disqualified.  
Nor fifth,  
In which case I might lose all chance of winning, claiming,  
or otherwise annexing the Prize Money.

See!  
That the petrol, the oil tanks are full and the engine  
Tuned to its highest extent.  
Bring hither  
My overalls, my cap, my muffler, my goggles,\*  
And oh! forget not,  
Ye black-faced, grimy mechanics,  
The one thing, the inevitable, the indispensable, the  
entirely important and necessary  
Cigarette.†

I will sing you a song, a little song, a song of the six-foot  
propeller.‡  
Oh, ye slayers of four-footed beasts and fowls not of  
the air!  
Oh, ye makers of sausages of the only true Cambridge  
blue!  
Oh, ye bloodthirsty, primitive-passioned road hogs  
Seeking to kill!  
Forswear  
Your old, obsolete, out-of-date methods of slaughter.  
What better weapon can you, or I, or anyone hope to  
find than the swiftly-whirling, deadly death-dealing  
Six-foot propeller?

Oh, ye citizens!  
Bring hither your dogs!  
The maimed,  
The halt,  
The blind, the imbecile, and the altogether indescribable,  
In one flash—they shall be no more.

But enough.  
Allons! Let go! I am off.  
The fever is in my blood.  
I will conquer, vanquish, overcome, win.  
I!  
Even though nothing remains of  
Me!

And my machine  
Be dissolved, desiccated, disintegrated  
Into fragments minuter than those to be found in the  
purlieus of Bryant and May.

I think, I am sure, I am certain  
I have flown at least five hundred and fifty and five odd  
miles,  
And my engine is singing a tune, not the sweet, steady,  
monotonous humming song,  
But a short, sharp, quick, spasmodic expiring two-step.  
Allons!  
I must descend.  
Let me cry with the great, the open-hearted, the free-souled,  
Back to the land!  
The trees are waving and tossing in frubulantic, intoxicated  
exultation  
Allons!  
Bump!!!

I will remain  
While the days, full of unrest, and hurry and bustle, and  
all unnecessary things go on,  
Here I will stay,  
Face to the far-off heavenly blue  
And  
Back to the land—  
In a bed of prize geraniums  
Owned by the most impatient, irritable, irascible, unreason-  
able, fiery, ferocious, fervently fluent

Old gentleman  
In the whole of two counties.

D. M. H.

\* Firms supplying these articles may have their names in-  
serted here on payment of a fee. Terms strictly ruinous on  
application.

† Ditto.  
‡ Ditto.

\* \* \* \* \*

The following is an exact reproduction of the wording and  
spelling of a letter forwarded to THE AEROPLANE by Mr. T.  
O'B. Hubbard, the secretary of the Aeronautical Society:—

"To all Whome it may Concern This is to certify that  
when this notice is read all persons in Command of aero plains  
who send their men up without an automatic safety device  
will be guilty of murder in the eye of God and Justice, unless  
they try to get the best 1 the undersigned has now in minde  
a device that will automatically keep his machine in balance at  
all times

"But have not the money to Put it on the market.

"Therefore I am calling on the people to make up a purse so  
I can get out these Patents and turn them free to the people  
at large. Positively I will not sign over these Patents to any  
Private firm

"These Patents should be free to all so our Inventors could  
use the Device for safety. now in the eye of Justes from man  
to man I want it understood that I can double discount any  
thing yet produced in the air ship line.

"I can build an air ship that will loop the loop in the air  
and travel between 200 and 400 miles per hour I can show you  
the limit in air Navigation I have no Special Price set I am  
not hunting great Fortuns. if these men who have been try-  
ing to monopolize the aero plain Business had these ideas  
the people could not get then for a million Dollars.

"Now if the people want to get monopoly on their side just  
drop in your mite to help me perfect these Inventions I have  
three styles of machines the aeroplain with an autamac Bal-  
ance An air ship that has a speed to cross the ocean in 12  
hours that can light on the water and rise up again at any  
time and a one man flying machine where as a 3 horse motor  
cycle engin develops 21 horse Power over the propellers at a  
60 mile gait a man can hold himself in the air with this  
machine if his engin stops he can controll it with his feet and  
light in safety.

"Now if the people wants to take a hand to help stop so  
many accidents let me hear from you.—C. M. COCHRAN."

\* \* \* \* \*

## A Litany of Aviation.

Whenever through the air I go,  
On a Wright or Blériot,  
Ever flying through the air,  
Never knowing when or where  
I shall land—or fall, maybe,  
*Libera me Domine.*

From magnetic sewage farns,  
From all dangers and alarms,  
From the terrible "remou,"  
Air pockets and currents, too,  
From a smash on land or sea,  
*Libera me Domine.*

When again from earth I sail,  
Hundreds hanging on my tail,  
When my elevating plane  
Fails to act, and once again  
I'm entangled in débris,  
*Libera me Domine.*

Last, from all adversity,  
From the people that I flee,  
Horrible publicity!  
Invitations out to tea,  
Interviews by journalists,  
Hearty thumpings of the fist,  
Scores of letters every day  
(Some proposals, by the way),  
Everything that worries me!

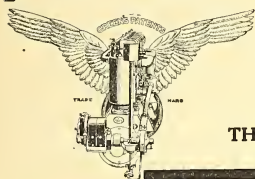
*Libera me Domine.*

B. L.



# GREEN'S AERO ENGINES

ALL BRITISH



The Green Engine fitted to Mr. Cody's Machine was the only one entered for the £10,000 Circuit of Britain Air Race, and the only British Engine to finish with all parts sealed and intact. This achievement—in conjunction with its past records—proves that the Green Engine is unapproachable for Reliability. Made in two sizes, 30-35 h.p. and 50-60 h.p. Weight, 4 lb. per h.p. Write for particulars.

THE GREEN ENGINE CO. (Sole Licences under the Green's) 55, Berners St., London, W.  
Motor Patents Syndicate, Ltd.  
MAKERS FOR THE PATENT ES—THE ASTER ENGINEERING CO., LTD. E.H.G.

## Nieuport Monoplanes.

**GORDON-BENNETT CUP, 1911.**

**1st. Weymann on a Nieuport. 3rd. Nieuport on a Nieuport.**

GENERAL AGENT FOR THE BRITISH EMPIRE:—

**MAURICE DUCROCO, Brooklands Aerodrome, Weybridge, Surrey.**

## ACCESSORIES



are a feature of our business. Everything required for Aeroplane Construction is in stock ready for immediate delivery. "AVRO" parts are designed upon practical lines by practical flying men.

**BUY YOUR PARTS FROM  
PRACTICAL MEN AND  
ENSURE DEPENDABILITY.**

Telegraphic Price List Post Free.

Every day sees more successful flights made on the "Avro" Biplane. Britain's most successful Aeroplane.

**A. V. ROE & Co.,**

THE AVIATORS' STOREHOUSE  
Brownsfield Mills, **MANCHESTER.**

Telegrams—TRIPLANE. Telephone: 698 CENTRAL.

THE NEW TYPE B

## VALKYRIE MONOPLANE

HAS NOW BEEN TESTED AND HAS  
PROVED AN UNQUALIFIED SUCCESS!

**Epecially designed for Military Service.**

THREE TYPES: 40-80 miles an hour.  
From £280.

ALL THREE TYPES FLYING DAILY AT HENDON.  
Tuition Free to Purchasers. Particulars on request.

**THE AERONAUTICAL SYNDICATE**

Established March, 1909, LTD.,

At the Flying Ground, Collindale Avenue,  
West Hendon, N.W. (6 miles from the  
West End.)

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## Aeronautical Research.

By P. K. TURNER

"The time has come," the Critic said, "to talk of many things,  
Of strength of tail and fuselage, of chassis, struts, and wings,  
And why the gents at Teddington, supposed to search out things  
of great interest to aero-designers and constructors, should have done, in their 1½ years of existence, absolutely nothing of use or importance."

In this article I wish to point out a few of the directions in which research is urgently needed. I had meant to show, in contrast, what had actually been done—but I have not found anything at all.

Take first, and most important, the question of planes. Our present knowledge of planes is roughly this: it is better to use a curved plane than a flat one; the faster the machine the flatter the planes, if the loading remain constant; it seems best to "ease off" the loading at the trailing edge, and to "wash out" or lessen the angle of incidence toward the tips (both at present moot points).

Now what could one do in a decently organised laboratory? First, it is a very simple experiment indeed to draw diagrammatic curves for travel of centre of pressure. This has, in fact, been done more or less with home-made apparatus. If a serious effort were made to experiment with mathematical curves—let us say with planes whose camber is a circular arc, a semi-parabola, an hyperbola, a cubic, and also with cissoidal, volute, and other curves—the probability is that one could work out, from the results, a complete theory of travel of centres of pressure.

The first and most obvious results would be that all planes could be safely built up on one spar (and, in the case of biplanes, with one row of struts), and that all control planes and warping apparatus could be balanced.

With the same curves there should be made a very careful series of experiments, not only of relative lift and drift, but also of lift per square foot at constant angle and wind speed: a research, in fact, into the mysterious constant "K," which expresses the efficiency of a plane. I know that many who read this will raise the cry of "mad theorist," saying that all types of plane cambers lift, in practice, equally well. What, however, the "practical," anti-theorist fanatic will forget is the fact that at present it takes 1 h.p. per 15-20 lbs. of load to fly comfortably, whereas it is eminently desirable to fly with 1 h.p. per 100 lbs.

### Correct S rear-line Form.

Then there is the matter of true stream-line form—equally important for fuselages, struts, and plane sections. Now it is a comparatively simple matter to experiment on drift of struts, etc., and the facts required are fairly simple. Given a certain chord, width of strut back to front, or length of fuselage, and a certain maximum thickness of plane, strut, or body, where should this maximum thickness come, and what should be the thickness at given fractions of the total width from back to front?

The experiments hitherto made, though useful, have generally been made with just those sections which appeared, to the eye of the experimenter, likely to be useful. What is needed is a set of experiments with stream-lines of true curves—for only in this way is it possible to build up a "working hypothesis" from which one can progress into fields hitherto unthought.

Take, again, the question of fabric strength: what is the use of testing the tensile strength of fabric on the warp and woof? Aeroplane fabric is always strained by a distributed transverse load, and supported in most cases along four sides of a rectangle. What is wanted is serious tests in this particular direction, so that one can find the safe loading for fabric in the way in which it will be used.

### Spar Strengths.

Take, again, the case of spars and struts. Compression struts have always been rather a thorn in the side of the civil engineer, even with his comparatively simple and constant loads. But in aero-design there is one case in particular which occurs practically nowhere else. A wing-spar is subject to a distributed bending load all along it, and it also has a strong direct crushing strain from its stay-wires.

Now it is well known that if a compression strut can only be kept straight, it can be loaded till the material of which it is made begins to crush, and break. In practice this never happens: the strut gives by bending, followed by collapse. Obviously, a bending load on the strut, as in the case of a wing-spar, will increase the tendency to collapse, and hence will weaken it enormously. But where are the tests and formulae? As usual, no experiments have been made, so far as can be gathered.

### Miscellaneous Tests.

Where are the results (priceless to a careful designer) of tests on extension of rubber springs under given load, of maximum safe extension, of tests of direct and sideways loads on wire wheels, on safe speeds of standard propellers, on propeller flutter, on petrol consumption of engines, on gyroscopic action of propellers and of rotary engines, on the balancing of rudders and warp, on the comparative power of warp, flaps, and balancing planes, and on a hundred and one minor points of design and construction, easy to test with decent apparatus? Many a practical designer would willingly give his right eye, his wife, or his latest patent, for information on these points.

One must remember that in every branch of physical science (including engineering) the history of progress has been the same: Visionary ideas; detailed but mad-brained theories; closer study; lives of devotion, rewarded by ridicule; the success of practical men and contempt for theorists; and then, theory and practice hand in hand, and a steady advance towards perfection unattainable.

In aviation the time has come for this final stage, and, knowing this, men have set up institutions where theory can do its work in aid of practice. But it appears that the workers in these institutions, like the monks of old, are growing fat and useless; and of all the shameful wastes perpetrated in our alleged civilisation, the worst, in my eyes, is an equipped factory, laboratory, or office, where, owing to the incompetence of those in charge or the laziness of their subordinates, or both, or *vice versa*, nothing is done.

### The "Circuit" Prizes.

The following are official awards of the prize money won during the "Circuit of Britain":—*Daily Mail* second £10,000 prize, to A. "Beaumont" (Lieut. J. de Conneau), £10,000; Sir George White, Bart., Chairman of the British and Colonial Aeroplane Co., Bristol, £250, divided between J. Védérines £83 6s. 8d., J. Valentine £83 6s. 8d., S. F. Cody £83 6s. 8d.; British Petroleum Company, Ltd., £131 5s., divided between J. Védérines £43 15s., J. Valentine £43 15s., S. F. Cody £43 15s.; 100 guineas "Entente Cordiale" prize, divided between A. "Beaumont" £52 10s. and J. Valentine £52 10s.; the Excelsa Company, £50 to A. "Beaumont"; Brighton Hotels Association, 100 guinea gold cup to J. Valentine; Harrigate Chamber of Trades, £50 tea service to J. Valentine; Hon. Sir C. A. Parsons, Major J. F. Laycock, and Northumberland and Durham Aero Club, £40 to S. F. Cody; J. R. Ogden, Harrigate, silver cup to J. Védérines; Stirling Town Council and Magistrates, Stirling souvenir, A. "Beaumont."

So Cody gets £167 15s. 8d. for all his trouble, and Valentine gets £170 15s. 8d. plus a cup and a tea service. So do we honour our heroes.

### Cody's Fine Performances.

S. F. Cody's luck is wonderfully bad. He has the fastest and most stable biplane in this country, and he has an engine which never lets him down. He himself is one of the two or three best fliers in the country, and he has forgotten more about wind and weather conditions than 90 per cent. of pilots are ever likely to know. Yet somehow something always prevents him from doing himself justice.

On August 14th, competing for the Michelin prize, he flew from Laffan's Plain almost to Southampton, owing to missing his way in a fog, came back to Andover, and then had to come down at Reading owing to a choked petrol pipe.

Again, on August 24th, he made the circuit of the course, Farnborough, Andover, Hensley, Brooklands, and finally had to come down short of petrol at Ash, only three miles from his destination, after flying the last twenty miles steering with one hand and holding his petrol tank in place with the other.



A Mean Advantage.



Wife (to husband returning at 3.30 a.m.): "Come down, you coward!"



## The Week's Work.

## Monday, August 21st.

**BROOKLANDS.**—Pixon out in morning on Bristol, with Lieut. Clarke-Hall, R.N., for quarter hour, and in afternoon with a passenger. Later, up again with Clarke-Hall twice for five minutes. Nasty, puffy day, air full of pockets. Henrietta, rediiva, up with Petre (the Monk) and Manisty, each doing straight flights. Hamilton, and the juvenile Robinson both out doing straight flights on the Dep (generally so called, owing to length and pronunciation difficulties of Deperdussin, which has been variously mangled into Depression, Dust-bin, Dupperdussin, and other atrocities). Lieut. Harford, on Universal Aviation Co.'s school Birdling, improving in his rolling.

**BRISTOL.**—Graham Gilmour took a re-built Bristol biplane out on test for half an hour. After preliminary circuit, in spite of fairly stiff breeze, he flew out in direction of Horfield, returning to the shops with very sharp left turn. On arrival over field behind workshops Gilmour treated appreciative audience to some very clever trick flying, diving to the ground, and, when disaster seemed inevitable, soaring sharply up again. Also gave exhibitions of banking. After a long switchback flight Gilmour concluded his performance by bringing the machine to rest exactly opposite the doorway of its shed. During the flight Gilmour took his hands off the controls and travelled for some distance with his arms folded.

**CAMBRIDGE.**—Lieut. Barrington-Kennett, of Air Battalion, arrived at Hardwick. Came from Biggleswade, having rested over week-end after experiences of Saturday.

**SHOREHAM.**—Valentine completely beat the telegraph on his speedy Deperdussin, from Ventnor to Shoreham. Arrival not expected. When leaving Ventnor, telegram was dispatched to Preston, at the Royal Albion Hotel, Brighton, announcing coming visit, but between 7 and 8 a.m., well before the message arrived, great stir created by appearance of aeroplane over Brighton. Valentine passed Shoreham at low altitude few minutes before, flying eastward, and raising conjectures as to who he might be. After circling over Brighton, he turned westward again, and went back to Shoreham. Has left machine there, as he is taking a short holiday before doing any more flying.

**HENDON.**—Gassler, new Chanter pupil, rolling for first time, managed to get machine, Anzani-Bleriot, about 10 feet off ground, and promptly turned over on one wing-tip, fortunately without doing any damage. Buchanan was out doing circuits.



Mr. H. Barber flying the Valkyrie racer on Wednesday.

## Tuesday, August 22nd.

**BROOKLANDS.**—Avro engine-behind biplane out at dawn. Young at the helm, and Raynham behind as instructor. Dep school at work as usual, and Harford out on Birdling. Rest of day too bad for flying.

**CAMBRIDGE.**—Lieut. Barrington-Kennett, of Air Battalion, starting from Hardwick Camp, flew to Newnham over Caius College cricket ground and back in 22 minutes, and did short flight with passenger, coming down at Comberton.

**THE PLAIN.**—Pizey and Fleming on Bristol school machines made short flights but weather too bad for pupils.

**HENDON.**—Gassler doing straight lines on Chanter's Blériot, showing great promise, as this only his second time out.

## Wednesday, August 23rd.

**BROOKLANDS.**—Hamilton making straight flights on Deperdussin; the youthful Robinson rolling with two cylinders—first time, one would imagine, that an Anzani engine has been thought too powerful! Petre (the Monk) and Lieut. Manisty doing circuits, and figure 8's, on the Hanriot. Lieut. Clarke-Hall out for first solo flights on Bristol. After rolling a piece did a 34-minute flight, then made a 12-minute flight, with a curious landing. Touched ground very sweetly, engine running, but in excitement of switching off forgot his control, and, unfortunately, pulled lever back. Machine answered beautifully, climbed to about 12 to 15 feet, stood absolutely still for about half a second, and pancaked. Damage: left half of chassis, inner cellule of left lower plane, and left lower aileron, pulverised: right and left upper wing-spars cracked, and one corner of tail damaged. Later, Spencer took his first "professional" passenger, and surprised everyone by the way his machine climbs. In evening, Morison took out the big Martin-Handyside, which climbed very well for two straight flights. Then attempted a circuit; found that the machine at once started dropping, and aimed for softest place (middle of sewage farm). But when just over edge of farm and about 80 feet up her left wing started dropping badly, and she simply refused to answer to any control at all. So Morison "leaned back and hoped for a whole neck," as



Ronald Kemp, on left, who has been flying well on the Flanders monoplane, and Lieut. Harford, R.A., now learning on the Birdling.

he put it himself. Machine heeled heavily, slid inwards, and, as usual in these circumstances, swung round and hit nose first. The magnificent workmanship of the machine saved Morison's life probably, for the only parts of the machine which broke were those that actually hit; the engine was broken out of the frame, about five feet of the left wing smashed, and the chassis and rudder flaps disintegrated. Altogether a wonderful escape both for man and machine. Morison's total injuries were two damaged knees and a scratched thigh, which have left him rather stiff for a few days. A belt might have saved even that.

FARNBOROUGH.—Lieut. Cammell, of Air Battalion, left Larkhill, Salisbury Plain, and flew to Farnborough on Blériot two-seater.

CAMBRIDGE.—Fine flight by Lieut. Barrington-Kennett, of Air Battalion, round Cambridge on Bristol biplane. Starting from camp at Hardwick about 6 p.m. he circumnavigated the University town and performed various evolutions. Local paper very funny on the subject. Said the machine must have been 800 ft. from ground at times, and looked almost as if it were a tiny box kite. Military Bristol looking size of box kite would be at about 3,000 ft.

THE PLAIN.—Tuition very brisk at Bristol school during morning, all pupils having good flights. Captains Pitcher and Hoare, both of Indian Army, took certificates in very good style. Both joined school same day (July 26th), and progress has been uniform throughout tuition, which took four weeks to the day. In the evening Gilmour arrived from Filton, covering the fifty miles in an hour and twenty minutes, with head wind. Finished journey in dark, guided by a beacon which had been kindled for his benefit.

HENDON.—In morning Valkyrie pilot made short flight on school machine, and then handed over to Ridley-Prentice, who made straight flights. Later Copland Perry did four circuits in fine style. Barber out on Valkyrie racer fitted with the new, metal-plated propeller patented by the Aeronautical Syndicate, Ltd., and put up some excellent show flights; later giving passenger flights to Miss Meeze and Heron. Ridley-Prentice out again on school machine, making good progress for over half an hour, flying the length of the Aerodrome at 40 or 50 feet in order to perfect his landings before attempting bigger flights. Has demonstrated how quickly pupil can obtain proficiency by following instructions. H. J. D. Astley, pilot of the Birdling, visiting Hendon, made fine flight over surrounding country in Blériot borrowed from Hamel. Hamel, on same machine, doing some pretty fancy banking, and later, on the big two-seater, took up Miss Hamilton for long flight in gathering darkness, well out over the country, and up to 1,000 feet or so.

#### Thursday, August 24th.

BROOKLANDS.—Bell, Hamilton, and Robinson out on Deperdussin; Raynham, Noel and Young on Avro engine-behind biplane; Young rolling; Lieut. Manisty out on Hamriot, and Petre did first certificate flight on same machine. Made curious mistake first attempt. Had done four circuits and then mistook the waving of his observers to Cody, who was passing overhead, for signals to come down, and did so. Kemp did one or two excellent circuits on Flanders monoplane, which shows up better than ever with new wing covering. Its inventor tried a passenger flight, the machine apparently lifting two just as well as one. At 7.20 Cody passed over on



Hamel and Miss Hamilton on the Blériot two-seater.

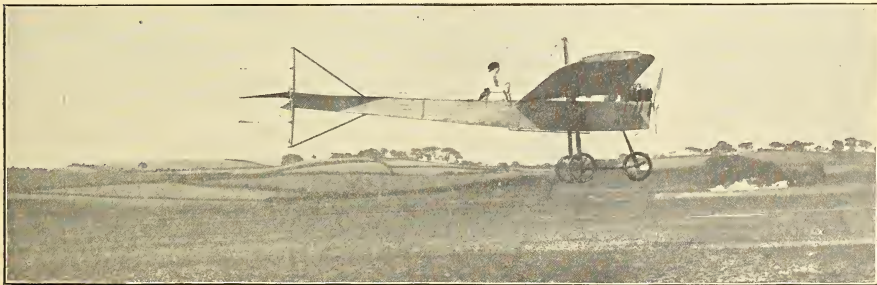
his way to Farnborough, on Michelin intent. Going well at about 1,200 ft.

THE PLAIN.—Weather good, and plenty Bristol school work done. Jullerot giving lessons to Lieut. Newall. Fleming up with Lee (a Chinese pupil, attached to Chinese Government) and Smith-Barry. Busted instructing Cadet Wheeler, R.N., Lieut. Watts and Lieut. Newall. In evening nasty breeze blowing, but Gilmour took up Lee, Jullerot Lieut. Bower, R.N., and Busted took up Lieut. Newall.

HENDON.—Valkyrie ready at 5 a.m., but fog caused lengthy delay. Towards 8 a.m. Copland Perry got in some good practice at 200 feet or so.

#### Friday, August 25th.

BROOKLANDS.—Flanders monoplane fitted with a Beney propeller showed wonderful improvement. Petre (the Painter) doing short, straight flights in excellent style. Green engine pulling well, and heaps of power in hand. Kemp did several circuits beforehand, showing speed and lifting power of best Continental machines. Petre (the Monk) on Henrietta did circuits, and landing in the rough broke several of chassis struts, retiring for repairs. Spencer, on own make biplane,



Harry Ferguson of Belfast flying his rebuilt monoplane at Newtownards.



flying well. Percival, on Billing biplane—now no longer the "Oozely Bird"—going strong. Deps at work as usual, as well as Harford on the Birdling.

**BALDOCK.**—Lieut. Cammell of the Air Battalion, left Hendon en route for Cambridge, but landed in evening near Baldock.

**THE PLAIN.**—Weather ideal, and nineteen flights made by Bristol school in morning. Besides passenger flights, several pupils did good solos. Harrison made one circuit, and Gibson did first two "straights" successfully. Lieut. Clarke-Hall, R.N., Pixon's pupil from Brooklands school, made two very good circuits. Lieut. Bower made two beautiful circuits at 500 ft. each, landing very neatly. In afternoon Sir George White arrived with friends, one of whom, Mr. E. I. C. Sinton, went for passenger flights with Gilmour and Jullerot. Exhibition flights given by Busted, Gilmour, and Jullerot, and ordinary tuition work going strong. By way of a novelty Prier went up as passenger with Jullerot. This was Prier's first time on a biplane, and it is said that he intends to pilot this type of machine as well as the monoplane. Later in the afternoon Prier gave magnificent show on new monoplane, finishing with perfect landing although wind was blowing cross-wise. Lieut. Bower did good solo, lasting a quarter of an hour, and Lieut. Clarke-Hall, R.N., flew first half of certificate test.

**HENDON.**—Cammell, another pupil, out practising for ticket on Chanter Blériot.

#### Saturday, August 26th.

**BROOKLANDS.**—Petre improving on the Flanders. Young and Raynham on the Avro-engine-behind, Spencer on the Spencer, Robinson and Hamilton on the Dep, and Harford on the Birdling, all practising in early morning. The old Avro distinguished itself by lifting four people off the ground at once, and flying length of the ground at an altitude of several inches. Now being generally overhauled. Woodwork cleaned up looks quite smart. Old wires, original French stuff, apparently galvanised iron, now being replaced by best British material from Halifax. Probably several pounds of castor oil on tail planes, so when these recovered should fly much better. Nothing doing all rest of day. Only excitement in evening produced by Blondeau testing new engine. Directly after Longstaffe's experience Blondeau, with characteristic energy, off to Paris, and returned with brand new Gnome metaphorically in his pocket. Obtained it by exercise of considerable ingenuity, what time French Army, with sixty Gnomes on order, patiently awaits delivery. No waiting where Blondeau is concerned.

**CAMBRIDGE.**—Lieut. Cammell left Baldock 6.45 a.m., and arrived safely at Harford Camp.

**THE PLAIN.**—In morning Lieut. Clarke-Hall, R.N., took certificate. Tuition lasted exactly a week, as he joined the Bristol school at Brooklands on Saturday, August 19th, thus the third Service officer to take his certificate at Bristol school during the week. School busy all morning. Cockerell, Harrison, and Gibson all flying circuits and landing neatly. Most of pupils at Salisbury Plain school are almost ready to take their brevets, and spell of good flying weather all that is needed to secure quite a little harvest of certificates for Bristol school within next few days.

**HEXPON.**—Driver flew to Windsor with Mr. Van der Weyer as passenger, leaving him at his own door. Left machine there all day and next night. Greswell followed later as far as Drayton, but returned to Hendon owing to bad weather.

#### The Air Battalion.

The Air Company has been cancelled, from Cambridge, as the big manoeuvres there have been recalled, and is ordered to Farnborough, where it will remain till September 14th, at which date all machines then in flying condition will be collected at Salisbury Plain to take part in the cavalry manoeuvres which are to take place there.

So far as can be gathered, the only machines available are three Bristol-Gnomes, one Bristol-Renault, one Farman-Gnome, all of the lifting-tail, engine-behind type, and Mr. Cammell's own private Blériot-Gnome, but as this is a 70-h.p. it is not so certain to be available as the others. It is also just possible that Mr. Hyne may have the newly-bought Bréguet, which he is now learning to drive at Douai, over here in time.

Mr. Massac Buist, in the *Morning Post*, makes the sensible suggestion that the War Office should subsidise sheds at various places all over the country, so that the Air Battalion may be sure of accommodation and have definite points to which to fly. But just at present it would be better to buy



**B. C. Hucks, the Blackburn pilot, who has been flying in the West Country.**

more machines, for the existing aerodromes are always pleased to accommodate the Air Company whenever it, or units of it, arrive.

It is feared that after manoeuvres the Air Company will have to return to Fittle Farnborough, its official headquarters. A foolish idea altogether, as Farnborough is the worst possible place for flying, and the "Plain" is at its very best in the winter. Mr. Massac Buist's suggestion that the Air Company should spend the winter in the huts at Bulford Camp is eminently practical. Far too much so to be adopted, it is to be feared. Presumably the Gas Company fears that unless recalled to headquarters the Air Company may go ahead at such a pace as to become a separate establishment, in which case the Gas Company would probably cease to exist, having done nothing to justify its existence, and so it is compelled, so to speak, to hang on to the tail of an aeroplane.

#### Indian Army Certificates.

Captains Cuthbert Hoare and Duncan Pitcher, of the Central Indian Horse, who commenced training on the Bristol at Salisbury Plain on July 26th, both got their certificates on Wednesday evening last. Beginning and ending their course on the same dates, and obtaining their certificates in less than a month, these officers certainly show the methodical manner in which a well-organised school is now able to turn out pilots.

India is now acquiring quite a number of officer-aviators, though the Indian Government still displays masterly inactivity. Can it be that the officers themselves, being wiser than the authorities, are taking up aviation in preparation for the big war, or rebellion, or whatever it is to be, which those in the know seem to expect as soon as the Durbar is over? It is said that the recent movements of troops in India, ascribed officially to drought, plague, and so forth, have a much deeper cause. Perhaps the Air Battalion may yet see its first active service in India.

#### The Hendy Aeroplane.

Lieutenant de Grailly, who has been training for the French military brevet on a R.E.P. at Buc, being entered for the military lawn tennis championship at Compiègne, flew R.N. there, won the championship, and flew back via Chalons.



## A Fine School Record.

From July 21st till August 26th the following aviators' certificates have been obtained at the Bristol Schools:—

Name	School	Date of joining	Date of occupied passing	Time wks.-dys.
Capt. H. R. M. Brooke-Popham (Oxford and Bucks. L.I.) ... ..	Brooklands	June 7	July 21	6 2
H. de Grey Warter (late 4th D.G.s.) ... ..	"	May 22	July 21	8 4
W. O. Watt ... ..	Salisbury P.	July 6	July 27	3 0
Lieut. W. Lawrence (7th Batt. Essex Regt.) ...	"	June 12	July 29	6 5
*Lieut. Col. C. O. Smeaton (R.G.A.) ...	"	April 7	Aug. 2	7 0
Brig.-Gen. David Henderson ... ..	Brooklands	Aug. 9	Aug. 16	1 0
Lieut. L. V. Blacker (Indian Army) ... ..	Salisbury P.	July 7	Aug. 17	5 6
Capt. C. Hoare (Indian Army) ... ..	"	July 26	Aug. 23	4 0
Capt. Fitcher ... ..	"	July 26	Aug. 23	4 0
Lieut. R. H. Clarke-Hall	Brooklands & Salisbury	Aug. 19	Aug. 26	1 1

\* This officer was away from the school for about nine weeks between the dates mentioned.

Total certificates for the month, 10; average time occupied, 4 weeks 5 days.

It should be remarked that in some cases the certificates could have been taken sooner, but were intentionally delayed, as greater experience was desired. A very wise reason for delay, and one much to be commended.

The following is a list of the pupils at present under instruction: Lieut. A. Wyness Stewart, R.F.A., Lieut. H. A. Williamson, R.N., Lieut. J. G. Bower, R.N., Lieut. R. J. Batts, 5th Batt. Worcester, Lieut. C. L. N. Newall, Indian Army, Cadet N. F. Wheeler, Mr. Z. Y. Lee (Chinese Government pupil), Messrs. O. S. Mellersh, J. Brereton, G. H. Slater, E. Pitman, L. E. Petavel, W. E. Gibson, S. P. Cockerell, and R. Smith-Barry.

There have been only two smashes during the month, one each at Salisbury and Brooklands, involving a probable total cost of £115 for repairs. This item, as nearly thirty pupils have been using the machines, is in marked contrast to the average of smashes at various schools here and abroad in earlier days, when bad smashes were frequent and minor breakages almost incessant.

It is interesting to note that eight of the ten certificates recently obtained at Bristol pupils were gained by officers of the Navy or Army, amongst whom Brigadier-General David Henderson (Chief Staff Officer to Sir John French) stands out prominently as the first officer of such high rank to take up aviation practically, and his passing for the brevet in one week is quite a remarkable performance, for which Mr. C. H. Pixton, his instructor, deserves his share of praise and congratulation, as also for the rapid passing of Lieut. Clarke-Hall, R.N. Of the pupils now undergoing tuition, it will be noticed that six are representatives of the Services, eight are civilians, and one has been specially sent by the Chinese Government.

Of the ten certificates won during the past month eight were taken by officers on the active list of the Navy or Army and one by a retired Army officer, showing how keenly officers in both Services are taking up flying, even when compelled to do so at their own expense.

## Yet Another Michelin Prize.

The Brothers Michelin have offered 150,000 francs (£6,000) to be won by French aviators only, under novel and almost useful conditions. There will be four prizes; the first, of 50,000 francs, will go to the aviator who, before August 15th, 1912, will have placed the greatest number of projectiles in a circle of 10 metres radius. The aviator must carry five projectiles, each weighing at least 20 kilos. (45 lbs.), must fly to an altitude of at least 200 metres (650 ft.), and must drop the projectiles one each time he passes over the mark. In the case of two or more aviators scoring an equal number of hits, the prize will go to the one whose projectiles total the least distance from the centre.

Another prize of 25,000 francs will go to the aviator who, under similar conditions, but flying at 1,000 metres (3,250 ft.), shall place his projectiles in a rectangle 100 metres (325 ft.) by 10 metres (32.5 ft.), the winner, in case of equality, being



A French caricature of Verpey, the Bristol pilot, and his machines.

he whose projectiles are nearest the axis of the rectangle. The other two prizes will be awarded by August 15th, 1912, the Brothers Michelin reserving the right to alter the conditions.

The idea is pretty, but why give the bigger prize for bomb-dropping from 600 ft.? At that height an aviator could be brought down by rifle-fire.

The idea of the Michelines is to prove whether the aeroplane has any value as a weapon of destruction or whether it is only useful for purposes of reconnaissance.

Apocryphos of this, the day after their prizes were announced, Védérines, always ready with something sensational, announced through the French Press that if anyone had a bridge they did not want he would be glad to go and destroy it by dropping real dynamite bombs on it, and show the efficacy of the aeroplane for destructive purposes. It will be interesting to see whether he does it or not, for there should be no difficulty in providing the bridge, but carrying a load of dynamite per aeroplane is another question, and the offer may be only another of Védérines's Gasconades.

Maurice Farman raises an objection to the conditions in that they limit the number of shells carried. He suggests that a machine able to lift fifty shells would be superior, from a military point of view, to one only able to lift five. He omits to mention, however, that the bigger machine would be slower, unless it were of abnormal power, and therefore could itself be smashed up by a small, light machine carrying a couple of hand grenades. Manufacturers who only make large, slow machines always seem to assume that their military machines are to be used only against an enemy who possesses no aeroplanes at all. To be any real use a military aeroplane must be able to do eighty miles an hour at least, otherwise it is always at the mercy of the new fast single-seat monoplanes.

## A New Idea in Propeller Construction.

The Aeronautical Syndicate, Limited, has just patented a new propeller, and last week tested it on the "Valkyrie" racer with highly satisfactory results.

The A.S.L. propellers are built of solid wood, upon which copper or other suitable metal is electrically deposited. There is no material addition in weight, and the following advantages are claimed: (1) A perfect surface and absence of skin friction; (2) the propeller is unaffected by weather and retains its shape; (3) great strength, very difficult to damage in consequence; (4) the highly burnished metal presents a beautiful appearance; (5) high degree of efficiency.

These propellers are thought by many good judges to be a marked advance, and the Aeronautical Syndicate, Limited, cordially invite aviators to call and observe them in actual use.

## St. Louis to New York.

The American aviator Attwood has flown from St. Louis to New York. On August 15th he flew from St. Louis to Chicago; on the 16th, Chicago to Toledo; on the 17th, Toledo to Cleveland; on the 18th, Cleveland to Erie; on the 20th, Erie to Buffalo; on the 21st, Buffalo to Syracuse; on the 22nd, Syracuse to near Albany. There he was hung up till Friday, when he got to New York. The distance is, roughly, 1,165 miles.

### Seven Hundred Miles in the Day.

The most wonderful flight of the year was made on Saturday last by a young pilot named Hélen, who only got his certificate a week before. Hélen, driving a Nieuport two-seater (not a racer), with a 50-h.p. engine, entered for the International Michelin Cup, and put up a flight of 1,126.4 kms. (about 709 miles) in 13hrs. 47m. 19s., out of which he had three rests of 24, 28, and 15 minutes respectively, totalling 67 minutes. It is worthy of note that this flight not only counts for the Michelin Cup but also for the Quentin-Bauchart prize for the biggest total of cross-country flights during the year, and for his military higher certificate.

Starting at 5 a.m., Hélen flew over the country between Betheny and Somme-Vesle, a course which gives 102.4 kms. to the lap. The wind was blowing at roughly 30 miles an hour, and so Hélen was obliged to fly at a height of between 800 and 1,200 metres to avoid ground gusts. One would naturally expect him to be worn out at the finish of such a flight, but when he came down at the control at Betheny he took on board his mechanic, Rispal, and flew back with him to the Nieuport sheds at Mourmelon, putting another 20 miles on to his day's work. Not only was Hélen troubled by the wind, but to avoid danger from artillery practice while passing over the camp at Chalons he was compelled to deviate somewhat from the straight line, and so actually covered a greater distance than that officially registered.

Besides his 30 kms. from Betheny to Mourmelon in the evening Hélen had done the same 30 kms. in the reverse direction in the morning, so his total for the day was actually 1,186 kms. (about 750 miles), or almost the equal of Paris to Brest and back.

On the following day he flew from Mourmelon to Paris, landing at Issy-les-Moulineaux, the journey only taking two hours, or about half the time in which it could be done by train.

The Nieuport record is now absolutely marvellous, for not only does the Nieuport hold all speed records, with and without passenger, except the 5 and 10 kms. on the single-seater, but it now holds the world's record for distance flown in a day and the Gordon-Bennett Cup as well. The Russian, Italian, and French Armies all possess a number of Nieuport machines, and it is to be hoped before long the British Army will also have some. It may be recollected that the Nieuport was the first machine to fly 100 kms. in the hour, and it is now the first machine to have flown 1,000 kms. in the day.

### The Farnborough Accident.

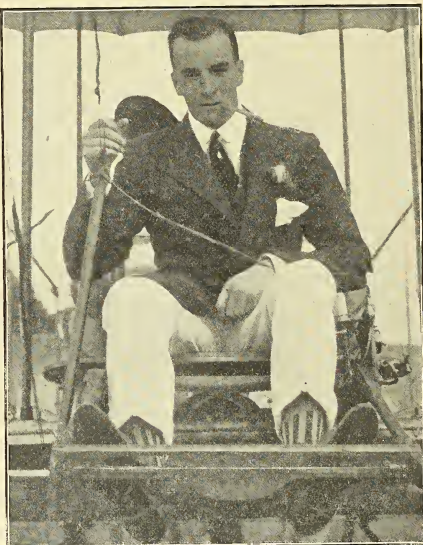
THE AEROPLANE is glad to have this opportunity of giving publicity to the fact recently made known that the late Mr. Theodore Ridge, before taking out the "Aircraft Factory's" biplane on which he made his fatal flight, was "warned by the designer as well as the engineer at the factory not to do so." These warnings, which are much to the credit of the gentlemen who gave them, would appear to indicate a lack of faith in the machine on the part of the very people who built it, for Mr. Ridge was a certificated aviator and knew how to fly. It is, therefore, somewhat strange that, when both its own designer and the engineer of the factory mistrusted the machine it was not broken up and the material put to a more useful purpose. Experiments are excellent things, but experiments with obviously unsafe machines are merely wasteful in money and may be, as in this case, wasteful in human life. It is sincerely to be hoped that "the little band of experimenters" at Farnborough will in future turn their ingenuity to better ends.

### 1912 Type Avros.

The Editor of THE AEROPLANE has been privileged to inspect the drawings of a new monoplane which A. V. Roe and Co. are about to produce at an early date, and he can promise aviators that they will have something very interesting to watch when the machine arrives at Brooklands. Without giving away any trade secrets, it can be stated that there are suggestions of R.E.P. and Nieuport about it, but such points as suggest these machines are utilised in novel ways. There is also a suggestion of the new Pivot, though Mr. Roe has never seen the Pivot, and has arrived at the same point by independent reasoning. Head resistance has been reduced to an absolute minimum, and altogether the machine is of more than usual interest. A biplane on similar lines will probably be built at the same time. It is admitted that the 1911 Avro biplane is the most efficient biplane yet turned out, for it does 45 m.p.h. and carries two people with its little 35-h.p. Green engine, and, simply owing to reduced head resistance, the new machine should be more efficient still.

### The British Aviators in America.

The Boston aviation meeting opened on Saturday last, when Grahame-White, flying his new 100-h.p. Nieuport, won the height and speed competitions. Sopwith, on his Blériot two-seater, won the stalling competition, and also was second in the bomb-dropping competition.



Claude Grahame-White, now performing in America—Good luck!

### The J.A.P. Motors.

The other day the writer had the pleasure of going over the works of J. A. Prestwich and Co., the makers of the well-known J.A.P. motors. As most readers are probably aware, this firm specialise in air-cooled engines of the eight-cylinder V type, which were used with success on the Roe triplane, the Martin-Handyside monoplane, and on Mr. Gilmour's original "Bat," amongst others. Messrs. Prestwich turn out what is possibly the best motor cycle engine that is made to-day, and it is no doubt their long experience in this class of light engine design which enabled them to build such a good thing in aero engines. Mr. Prestwich informed the writer that they can deliver their eight-cylinder V type motor within a week or so from date of order. All working parts are ground to gauge, and the stores are such that should ensure immediate delivery of all spare parts ordered. The writer also saw two complete monoplanes somewhat of the Blériot type but differing greatly in many details, also several sets of uncovered wings for them; they both appeared to be very sound and well-finished jobs.

Owing to the fact that Messrs. Prestwich have just moved into new and larger works because of the great call made upon them this year owing to the boom in motor cycles, they have not had the time to produce anything new in aero engines and aeroplanes, but it is understood that in the near future they will again enter the field of aviation. This note would be incomplete without stating that these new works, although not unduly large, are the best fitted shops it has been the writer's fortune to see.

### Another Rotary Engine at Work.

Those visitors to the Paris Aero Show last year who were interested in the workmanship of the Rossel-Peugeot engine may be interested to know that Lesna, the old long-distance racing cyclist, has recently been doing flights of between half an hour and an hour's duration at Issy on a Blériot with one of these engines.

### The Train Monoplane.

Although this machine has been in existence over a year, it is only just lately that it has come before the public notice. It was entered for the Paris-Madrid race, and, piloted by its constructor (the only machine so handled), flew from Mournmelon to Paris, on the way beating the records of that date for time, distance, and pace for cross-country flying of a monoplane with two up. At the start it was so unfortunate as to be the cause of the accident in which the French Minister of War was killed. Later on it distinguished itself in the European Circuit.

The fuselage is triangular, and built up of steel tubes, so that it can be taken to pieces by undoing a dozen bolts with an ordinary shifting spanner. The lugs are clamped and not brazed in place—in fact, it was owing to a brazed lug in the tail breaking, about the only brazed part on the machine, which caused Train to retire from the European Circuit between Dover and Shoreham.

The wings are of specially stout construction, and are stayed to the fuselage by cables, but no strainers are used. The landing chassis is of the usual skid and wheel type, using only two wheels, with an axle running right across, and rubber shock absorbers.

The pilot's seat, as will be seen from the line drawing, is below the engine and planes; but the usual objection to this class of machine that the centre of gravity is too low is overcome by the engine and tanks being placed above the planes, thus bringing it somewhere about the right position.

The worst point about this arrangement is that in the case of a bad "pancake" the engine may leave its bearings and suppress the aviator, and the aviator is far too near the ground for comfort.

On the other hand, there are several advantages, one of the greatest being that one is able to use a very much larger diameter propeller, and that an unrestricted view is obtainable in all directions. In any case it is to be preferred to the engine-in-the-back-of-the-neck proposition.

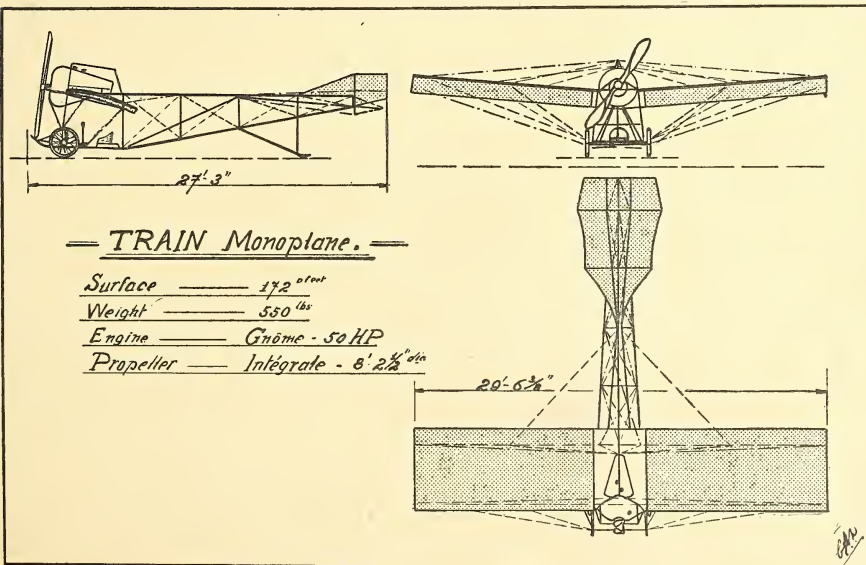
That this machine is a sound, practical, cross-country flyer is borne out by the fact that M. Train, in the Circuit of Europe, carried all his spares and tools on the machine, and was followed by no cars or mechanics, which was no doubt, one of the most noteworthy performances of the whole circuit.

### New Blériots on the Stocks.

Blériot has been having a kind of "postman's holiday" testing new type machines at his seaside villa. The new "Type 27," Blériot is designed to replace the eternal "Type 11," and, from descriptions to hand, seems to resemble somewhat the new Bristol monoplane described last week, but with the well-known Blériot chassis in a lighter and narrower form. The fixed tail-plane has been abolished, and the whole width of the tail is now the elevator, the rudder being above and in front of it. With racing wings the machine has been tested to do about 80 m.p.h., and with ordinary wings about 66. Blériot has also resurrected the old "Type 5," the first aeroplane known as "Le Canard." This is a tail-first monoplane, using ailerons instead of a warp, with a long cased-in fuselage and the motor behind. The pilot is supposed to see the ground through a window in the fuselage when alighting. Voisin and other constructors are trying the same idea, but mica and celluloid are useless, so we must wait for unbreakable glass before we can expect much in this way. At Etampes the Blériot pilots are testing a 100-h.p. three-seater, specially built for the French Army trials next month.

### Flying in Devonshire.

The first exhibition of flying in Devonshire is to take place on the 8th, 9th, and 11th of September at the Plymouth Racecourse. The meeting has been organised by Mr. Marshall, of Plymouth, in conjunction with the Universal Aviation Company, Ltd., and, given decent weather, should be a great success. The aviators engaged are Mr. Gustav Hamel and Mr. H. J. D. Astley, two of the finest monoplane flyers in this or any other country. Mr. Hamel will fly his Blériot, of the latest type, and Mr. Astley will fly a Brooklands-built Birdling, as well as the famous "Big Bat" Blériot, now entirely rebuilt and stronger than ever since her recent smash, when Mr. "Smith" waited too long for the ground to get close enough to land on. The "Big Bat" is one of the finest and safest passenger-carrying machines in the world, so West Country people should have a good opportunity of making flights as passengers. It is an open secret that Mr. Hamel has his eye on altitude records, so something unusual in the way of high flying will probably be seen also.





## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

### A First Visit to Brooklands.

Sir,—Although an enthusiast in the cause of flight, it was not until a few days ago that I was able to pay my first visit to Brooklands, and incidentally actually for the first time to see a machine in the air, though I have visited other aerodromes, but unfortunately on days when flying was impossible.

Brooklands is certainly a fine ground, and at little expense could be made better, but what a long walk it is from Weybridge to the hangars! I wondered at the time why a small footbridge cannot be thrown across the river near the motor-car enclosure; this would give a near cut to the sheds, and could easily be closed on motor-race days, if the crowd threatened to swarm on to the flying grounds. [Even a few people walking across the ground discommode the aviators. What is wanted is a path along the back of the banking on the railway side.—Ed.]

Now a few words as to machines, of which, unfortunately, several good ones were away at Ventnor, etc. The Bristol we all know, and Pixton struck me as a very steady flyer; the Martin-Handasyde struck me as a sound machine, and should certainly give a better account of itself. Spencer's new biplane is a splendid piece of work, and I like the double surfacing of his planes, while he also gives his passenger a most comfortable seat. I congratulate him on getting his brief on a machine of his own construction, and wish him every success.

Percival was out on the Billings. My word! can't she whistle? I was told the radiators were the cause. In their present position they offer a big head resistance, and possibly the machine would fly better if the radiators were placed longways on the machine; the plane surface could do with a little more tautness, or, better still, a double surface with a Phillips entry. I like the machine, especially the engine position, and feel sure it would fly well if these alterations are made.

I had an interesting chat with Baron Roenne, and gleaned something as to what may prove to be the first successful transatlantic flight in a dirigible, a project to which the Baron is now devoting his time. I was much struck with the enthusiasm of the ladies, and their extreme eagerness to go up—much more so than mere men. I enjoyed my first trip to Brooklands very much, and look forward to another visit in the near future.

H. V. HALL.

Cambridge.

### Those Engines.

Sir,—I have read Mr. H. J. D. Astley's letter *re* rotary engines, also your reply to same, and in connection with this discussion would like to voice my own opinion of the engine in question.

I first came in contact with the Gnome at the first Aero Exhibition held at Olympia nearly three years ago, and was very favourably impressed by its superb workmanship. Many firms had already experimented with engines on the same rotary principle, but all in their turn had been unsuccessful in producing an engine of satisfactory design. In consequence the Gnome was viewed with entire disfavour, and in conversation with several experts I found the general opinion was that the engine would ultimately prove a dismal failure. About this time, M. Laurant Séguin, the well-known designer of the Gnome, was approached by Paulhan, who, as you know, had won a Voisin biplane in a competition for model flyers organised by the Aéronautique Club de France.

As the prize did not include the all-essential engine, M. Séguin arranged to let Paulhan have a Gnome on credit, to be paid for out of any prize money the latter might win. Everyone knows the immediate success which attended Paulhan's efforts as an embryo aviator, a success which was almost entirely due to the splendid working of his rotary Gnome.

After that, the story of the Gnome is quickly told. Farman, recognising its value, fitted one to his own machine, and at the Reims meeting of 1909 astounded everybody by beating easily the world's records for duration and distance, although

up to that time he had not been considered in the running. Blériot immediately took the engine up, and in a short time the various pilots of his machines had snatched most of the world's records from their holders, and to-day if an aviator wants to win an important prize or break a world's record he chooses for his motive power the Gnome engine. Why? Because the Gnome remains to-day, as it always has been, absolutely the only engine on which a pilot can unwaveringly rely!

I am patriotic, exceptionally so, and it is with great regret I watch the vain attempts of our own designers to produce a practical aviation engine. The ridiculous and absurd show put up by the several British engines taking part in the "Alexandra" competition made us a laughing stock before the whole engineering world, and the pill is all the more bitter to swallow since we pride ourselves upon being the best engineers in the world. No one can be more sorry than I to see English engines beaten so easily by a foreign motor which itself is by no means anywhere near approaching the ideal. There is room for improvement in all engines (where there is a fault there is always a remedy), but at the present time the Gnome stands because of its performances, the first and last word in aeronautical engines.

With regard to your final answer to Mr. Astley, I have come to the conclusion that even designers of the most successful type of flyers are a long way behind you and me and several others in the knowledge of how to build a respectable flying machine.

Who ever beheld such a crude affair as the tail of the Morane monoplane? There are little boys at the "Arundel House School Aero Club" capable of designing a better. The Morane is very fast, but surely you do not mean to suggest that its speed (or that of the Blériot) is assisted in any way by this primitive tail arrangement? It is well-known that a tail with a positive angle of incidence creates a drag on the machine when turning, and that a correctly designed aeroplane should have a floating empennage. With reference to your remark *re* the instability of certain machines laterally, I presume you suggest that all aeroplanes should have dihedral angles to their planes.

Certainly a slight dihedral is necessary in the present day aeroplane, but it certainly will not be essential in the flying machine of the future, when speeds of well over 100 miles per hour will be reached.

It is a source of considerable amusement to me to watch the way in which our own designers differ in ideas. Henry Farman seems to be the one who suffers most in this way.

Not content with copying in every detail the original machine, no sooner does Farman make an alteration (not necessarily an improvement) than the said alteration almost immediately appears on the English copy. As an example, when Farman lengthened his top plane and called the machine "military type," our English constructors at once did likewise. When he did away with his front elevator, they followed suit, and so they go on, and finally they will get the perfect aeroplane—after Farman. The amusing part about the whole business is that everybody else knows that some of the designs are no good at all.

Stringtellow and Henson years ago, and to-day M. Levavasseur, have proved definitely and conclusively exactly how an aeroplane should be designed.

As a concrete example of aeroplane development, take the Roe biplane. That machine to all intents and purposes is ideal; yet, although Mr. Roe has been studying and building machines for years, it is only recently that he has evolved the present design. No doubt Mr. Roe originally worked on the analogy that a plank is better supported on two trestles than one; in that case, experience no doubt has taught him that aeroplanes are not to be considered under the same analogy.

I am pleased to notice that at least one other big firm is following his example, and producing a machine with the centre of gravity balancing in line with the centre of pressure of the main planes, with the centre of thrust bisecting them both. This is the correct and only way to build an aeroplane, and all machines must eventually be so constructed.

Alluding to your remarks in regard to over-powered machines, the two great essential points about aeroplanes are reliability and speed, and at the present time these can only be obtained with the aid of powerful engines. In time to come, when we have developed and improved our fliers to a sufficient extent to enable us to reduce our power plant without at the same time reducing speed and efficiency, we shall do so. At the present stage of aviation, however, we find a powerful engine essential.

ERNEST WARDE-FOX.

[When Mr. Warde-Fox states that "the Gnome remains to-day, as it always has been, absolutely the only engine on which a pilot can unwaveringly rely," he apparently forgets that in the European Circuit the *only* engine to get round unchanged was the R.E.P., and that in it not even the sparking-plugs were touched. It ran into a good third place, although it left Paris 80 hours late. Also, in the International Michelin Cup contest last year, a Renault won, and a R.E.P. was second, the latter being much faster, and only doing less distance because it ran short of petrol. Further, at the present moment, immense cross-country flights are being made day after day from Buc by French officers on R.E.P.'s and Maurice Farman, using R.E.P. and Renault engines respectively. Again, the world's height record with passenger is held by a Bréguet using a Canton-Unné engine. The Michelin Grand Prix of £4,000 was won by a Renault, and the Constructors' Prize at Reims last year, the big prize of the meeting, was won by Antoinettes. In fact, whenever the R.E.P. or the Renault have been put up against the rotary engine by men who have taken the trouble to understand them, and who have treated them properly, they have always come out on top; and the rotary engine has also been beaten many times by the Antoinette. As regards the copying of the Farman machine: No one has copied Farman's latest idea of putting the aviator feet in front of the planes, and no one is likely to do so. Mr. Roe never used a front elevator, and biplanes without front elevators are merely a natural development consequent on an increase of knowledge. As for copying in general, it would seem that Voisin copied Chanute, Farman copied Voisin, Sommer copied Farman, Maurice Farman copied Sommer, and each copy improved in one way or another on the original. British constructors have merely done the same thing, where they have not worked on entirely original lines as Mr. Roe, Mr. Barber, and Mr. McFie have done.—ED. THE AÉROPLANE.]

### Aero-Design.

Sir,—May I ask your correspondent "Ventre-à-terre" how he assumes a machine having a heavily loaded elevator and tail *à la* Sommer to be of "Avro-Bréguet" type?

Probably he meant "tail *à la* Antoinette," but if he really meant what he wrote and has a financial interest in such a machine, I should advise him, as a disinterested person, to sell his interest at once, if he can find anyone silly enough to buy it.

His idea of the shifting C.G. was tried some time ago by Piffard, when he had his first machine at Ealing. The engine was fixed in a sliding bed, and held back by rubber springs. As the engine was accelerated it moved forward, thus shifting the C.G. A locking device was fitted, under the control of the pilot, to keep the motor back until the machine was in the air, when the motor was allowed to slide forward under pressure of the propeller, thus automatically decreasing the flying angle of the machine without the necessity of bringing the supplementary planes into active and retarding operation. Unfortunately, before the device could be properly tested the whole machine was completely wrecked one night in a storm.

Some months after Mr. Piffard built another machine, but on this he omitted the sliding arrangement, because, as he told me, other machines flew very well without it.

Practice and study of aeroplanes in flight have taught us that it is only necessary to be able to drop the tail of a machine to a certain extent when about to rise and a machine can be made to fly with a very low angle of incidence and short span, the horse-power required being no greater than that ordinarily used.

As to the variation of speed, experience has taught us that the extra resistance brought about through the deflection of the horizontal rudder is not nearly sufficient to counteract the rising speed of the machine consequent on the reduction of the flying angle. It is, therefore, possible to considerably vary the speed of a flying machine simply by the operation of the horizontal rudder, any other device such as that suggested being superfluous and unnecessary.

ERNEST WARDE-FOX.

### Concerning Compasses.

Sir,—I was much amused at the remarks *re* iron tonic. Several of my non-aviating friends were extremely delighted, and drew my attention to it. I introduced the paper some time back to them, and they have got very keen, and now take it regularly.

Returning to the iron tonic story, although this is not true, I actually had to make complaint about the steel strap and fastening of a certain aviator's safety belt. This belt has a

large piece of steel near the front of it, and when filled by a thin aviator before lunch is considerably further from the compass than when occupied by the same aviator after lunch, especially if he has been attending any of the elaborate banquets with which the aviators have been fêted lately.

It is true that the effect on the compass is not large whilst the steel in the belt is in a soft condition, as in that state it would not be permanently magnetised, but as the act of hammering the rivets hardens the metal, and at the same time induces magnetism which becomes permanent, the results may under certain circumstances become serious to the correct reading of the compass.

The amount of magnetism induced depends greatly on the amount of hammering and also on the direction in which the metal is lying relative to the north and south magnetic poles of the earth.

It may not be generally known that a ship built of steel becomes strongly magnetised simply through the hammering in the building of it, and years afterwards an experienced man can tell which way its bows were pointing during construction simply by testing the permanent magnetism of the ship.

As regards the question of this being the cause of the most excellent belt supplied by the Universal Aviation Company, I am only looking at it from the compass point of view, and when I own a monoplane my first purchase will be a "Birdling" belt, fitted with non-magnetic clasp.

At the present moment I am yachting, having lately brought my boat from Twickenham to the Solent. I am enjoying myself thoroughly with my patent engine, that takes to pieces whilst running. When I find things getting monotonous I take a carburettor down or grind in a valve; it is quite interesting doing this when passing over the Needles (round them, I mean). Of course, taking down the water-pump or magneto, with the occasional removal of the sparking plugs, is such an easy job that I have lately lost interest in doing it.

Still, I feel that there may still be some interesting times in store, as I think any of these slight adjustments done, say, over the centre of London would add a new joy and sensation to life. Anyhow, it would be a glorious death.

Clift compasses are in great demand. One has been stolen from Brooklands, also a set of maps. The aviator (I presume it was one) evidently knew a good thing when he saw it. If it is returned no questions will be asked. (Is this compounding a felony?) Anyhow, all my compasses have a secret number, so that I am sure to be able to trace it later on.

You really must not abuse the War Office. They have wakened up. We are well ahead of all other nations; four compasses have been ordered and delivered.

ERIC H. CLIFT.

Lee-on-Solent.

### That Cheltenham Machine.

Sir,—You may be interested to know that my 10-12 h.p. engine stuck in her fragile frame quite well, but since the smash I have decided to alter the fuselage, as there was too much whip on the front plane. I was just getting it fit when the accident occurred. I am quite satisfied, as you can get experience for nothing, and I have learned quite a lot as to the handling of this kind of craft. I have ridden on the footplate of an engine, in cars of all descriptions, and on a racehorse, but the sensations of an aeroplane beat them all.

HARRY HIGGINS.

Cheltenham.

### Long Distance Model Flying.

Sir,—Possibly the following formula may assist some of your readers in estimating the distances flown by their models:—

Let  $d$  = Actual distance flown (yards).

And let  $D$  = Estimated distance flown (newspaper yards).

Then  $D = 3d^2 + 110$ .

I have found it most useful myself.

C. READER.

### Mr. Ridge's Accident.

Sir,—In the last number of your paper (No. 12) I noticed a paragraph concerning the death of Mr. Theodore Ridge:—"Mr. Ridge only took his certificate a week or two ago, under the instruction of Mr. Fleming at the Bristol School on Salisbury Plain." Would you kindly correct this in your next number, as Mr. Ridge never was our pupil, but only asked us permission to use one of our machines to take his certificate. To please him we gave him facilities to do so and he succeeded in qualifying for his brevet on the same evening. Mr. Fleming, of course, has never been his instructor, but tried the machine in the air at Mr. Ridge's request before sending him for his brevet flight.

As I pointed out to you, since we started our school not a single mortal accident has ever happened. We never rush our pupils in any way, but give them the benefit of our advice as long as they have not gained experience, no matter if they are self-confident or not, as long as we judge that self-confidence unjustified.

Hoping that you will be only too glad to do justice to our friend Fleming,

Lark Hill.

W. JULLEROT.

[The lines quoted were intended to show that Mr. Ridge was able to fly on a properly-designed machine. Of course, no instructor can be responsible for what happens after a pilot has taken his brevet, and it is satisfactory to be able to publish M. Jullerot's letter, which sheds further light on this sad accident.—ED. THE AEROPLANE.]

### Efficient Engine Control.

Sir,—Respecting your recent discussion upon the writer's few remarks concerning engine control, one quite admits the possibility of overshooting the mark with an extra air valve lever, and so spoiling the mixture; but would this be likely to happen at a critical moment, because refinement of adjustment need only be made at suitable moments, assuming an approximately correct mixture to be normally available, without the use of a supplementary hand-controlled air valve?

After seeing a complete afternoon wasted in a dead calm at a meeting by a pioneer British aviator possessing a good machine fitted with a most successful standard English engine, apparently entirely through the stupid arrangement of carburettor adjustment—this aviator flew beautifully when he got his engine to pull (his mixture)—well, criticism is called for! Presumably this *modus operandi* would be considered quite satisfactory by some people, being merely called tuning up! It is also true that the majority of car engines (provided with an automatic carburettor), controlled with average intelligence, are usually run upon a mixture the suitability of which concerns the driver even less than his ignition timing does. Petrol consumption trials sometimes step in, and then complete hand control takes a leading position.

Probably the extra air valve would be much better arranged when under direct hand control of the pilot, for the difference of adjustment required on a hot day, between, say, 3 p.m. and 6 p.m., is sometimes very marked, not to mention the probable large variation encountered during changes of altitude.

It is important to remember that this valve largely regulates the suction acting upon the jet. Seeing that full power at normal full speed is almost continually required—at present—ignition timing and carburettor adjustment should not call for much attention from the pilot, though, of course, a given opening of the extra air valve for a hot, dry day would be far too much for a cool, damp evening at a given altitude.

Engines possessing small flywheel effect, when momentarily switched off (namely, by short circuiting the armature L.F. winding of the magneto, or other ignition cut off) and then only assisted to rotate by the draught propeller torque, might be much more conveniently and safely handled if fitted with an exhaust valve lifter to release the compression and facilitate picking up again, or, alternatively, a clutch and emergency governor.

Probably some of us realise that, after all, aeroplane engines are still gas engines.

Bramhall.

JOHN B. BUTLER.

### To an Anonymous Correspondent.

If the gentleman signing himself "An Old Acquaintance" and writing from the "Gas Works," Farnborough, will do the Editor of THE AEROPLANE the honour of calling on him any morning between the hours of 10 a.m. and 1 p.m., the Editor will be glad to listen to an explanation of his postcard, or alternatively will give himself the pleasure of either dropping him down the lift shaft or kicking him down the stairs, as he may prefer. On Tuesday, being press day, the Editor is usually busy, and would prefer any other day in the week.

### Another Blériot Success.

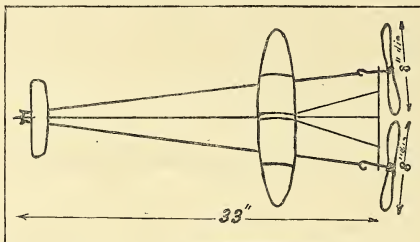
The first flight for the "Coupe Femina," the French trophy for aviatrixes, was made by Jane Herveu on August 10th, when she covered 101.6 kms. in 1 hr. 45 m., with a 25-h.p. engine.

### The Latest Pilots.

The following aviators' certificates were granted by the Royal Aero Club Committee on August 17th:—114, G. M. Dwytt; 115, Lieut.-Colonel C. O. Smeaton; 116, Louis Noel (subject Aero Club de France); 117, Lieut. S. D. A. Grey, R.N.; 118, Brigadier-General D. Henderson, C.B., D.S.O.; 119, Theodore John Ridge.

### The "Mann" Monoplane No. 40.

The "Mann" monoplane No. 40, which differs very materially in design from previous "Mann" models, has proved itself a very efficient machine. The fuselage consists of a single stick, braced with fine piano wire, the propellers being mounted at the base of a small triangle placed at the rear.



The general dimensions are as follows: The fuselage is 33 in. long, of 3-16 in. by 3/4 in. silver spruce, braced top and bottom with 35 S.W.G. piano wire, strained with a 3/4 in. barrel strainer. The king posts are of hairpin wire, 13 in. long, lashed and glued to the wood. The main plane is 16 in. by 3 1/2 in., elliptical in shape, the wire framework being covered with Hart's fabric. Attachment to the wing is by means of a wire tongue in the centre of the leading edge, an elastic band lashing this to the main fuselage member. The elevator is 7 in. by 1 1/2 in., rectangular, and is made of silver spruce placed at a dihedral angle of 30 deg. There is no angle of incidence, but the rear edges are slightly down-turned. The propellers, 8 in. in diameter and 24 in. pitch, are made from 1-20 in. birch. They are driven by two skeins, each of six strands of 1/4 in. strip elastic. Approximately 1,000 turns can be obtained, and the quarter-mile has been performed on several occasions. The model has also kept the air for a period of 74 seconds.

### The Visitors' List.

Mr. Duigan, of Mia Mia, called to talk over the merits of various machines, as he is contemplating taking back with him to Australia one or two machines and a spare engine or two, if he can come across anything in the way of bargains. He says that there is a really fine field for aeroplanes on the big up-country stations, and even for sporting purposes there are good prospects.

Mr. J. L. Longstaffe came in to discuss the cylinder-shedding propensities of rotary engines. Considering that he was quite a novice on the machine when he shed a cylinder, as described in his letter last week, he is to be much congratulated on having brought the machine down safely without breaking anything.

Mr. Gordon England, looking much better for his holiday in Sussex, but still with a wire-mark across his nose, called on his way down to Bristol, where he is busily engaged on the testing of a new type Bristol biplane. From his description, which, unfortunately, it is not permissible to publish at the moment, something extremely good may be expected to appear, perhaps in the course of the next few days.

Signor Mario Arioli, of Cardiff, reported that already a sufficient sum had been raised in Cardiff to ensure quite a respectable display of flying to be given about the middle of September. Negotiations have practically been completed with two really good aviators, and possibly others may be added to them later on. The good people of Weston-super-Mare are bestirring themselves to instal an aerodrome of sorts in preparation for a flight from Cardiff across the Severn, and, if possible, arrangements will be made for a meeting at Weston itself.

Mr. Maurice Ducrocq, paying a flying visit to London between his exhibition flights at Workington, described the appalling conditions under which the exhibition flyer occasionally has to work. He arrived at Workington to find his machine on a truck in a train held up by strikers, so that he and his assistant, Mr. Shaw (formerly of Leicester), were compelled to act as engine-drivers, shunters, and goods-yard porters all in one. Afterwards they got the machine to the ground, to find that the accommodation provided for it was an ordinary little refreshment tent, so the old biplane had to



**£650****The Flanders Monoplane**

(TWO OR THREE SEATS).

**READY TO FLY.****60-80 Green Engine ("Circuit of Britain" type).****50-60 miles an hour** [L. Howard Flanders, Brooklands, Weybridge].**CLIFT AERO MAPS.**

Used in the "CIRCUIT OF BRITAIN" and all Cross-country flights. Clift Maps were used by Vidart, Kimmerring, Valentine and others in the European Circuit, and by the majority of flyers in British Circuit.

**Clift Aero Compasses.**

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators. Necessities for the "CIRCUIT OF ANYWHERE."

For terms, write—ERIC CLIFT, c/o "The Aeroplane," 166, Piccadilly, W.

**Blackburn Monoplanes****TUITION.****EXHIBITION FLIGHTS ARRANGED.****THE****Blackburn Aeroplane Co., Balm Rd., Leeds.****IMMEDIATE DELIVERY.****400-500 YARDS.**

Complete set of parts for building

**No. 3 "Aerial" Twin Propeller Racing Model**

including all necessary Wood (planed), Main Aerofoil, Aluminium Elevator, Straining Wire Turrets, Rubber, etc. Finished Varnished Birch Propellers, Protecting Skid, full Instructions and Drawings.

**Post free 2/9**

We have been requested by numerous customers to design a more advanced Set of Parts and have pleasure in bringing to the notice of our Friends our

**AT-17 Set**

which, we feel certain, will meet a long-felt want for a model that will rise from the ground under its own power (not pushed), and after a long and steady flight will land lightly on its chassis. The set contains all necessary wood, finished propellers, material for aerofoils and chassis. Complete drawings and instructions. Securely packed in strong wooden box. Length 3 ft. 2 in. Span 2 ft.

**Post free 4/9.**

Mr. F. PHOLE, Lancing, Sussex, writes:—"I cannot help writing to you and expressing how delighted I am with A.T. 17 sets received yesterday. I built the machine in forty minutes, and got some graceful flights. It is really very pretty to see the No. 3 Aerial and the A.T. 17 in the air together. I am trying to get a good photograph of them flying together, and will send you one. A great point in the A.T. 17 is the graceful manner in which it lifts from the ground, which is very pleasing."

Look out for our Steam and Petrol Model Engines, weighing from 2 ozs. complete with propeller.

*More Testimonials next week.***THE AERIAL ENGINEERING WORKS,  
BALHAM, LONDON, S.W.**

Telephone: Battersea, 1930.

Telegrams: "Supplying," London.

A B C Code, 5th Edition.

camp out all night. Next morning Mr. Ducrocq took it out from the aerodrome, which is a cycle track four laps to the mile, and proceeded to explore the surrounding country. Immediately on leaving the track he found himself over a couple of small fields chiefly composed of broken bottles and brick-ends. Then he had to cross two railway bridges, and after that found a small and rocky river below him. As there was no room to turn, owing to the hills on each side, he had to fly up the valley of this river with his engine misfiring badly, and finally discovered a field where he was able to land and send back for fresh sparking plugs. As his engine was then pulling well, he took the machine out to sea and nearly got lost in a mist. Fortunately the harbour lights were still at work, and he came back over the harbour to the cycle track. On arriving there he was forced to do a *vol piqué* from about 250 ft., in order to get into it, and while in the middle of his dive the covering strip along the back of his elevator came loose and burst with a loud report, the ends wrapping themselves round the elevator booms in such a way that he expected them to jam the working of the elevator. However, he managed to land all right, but it was not the kind of landing to which he has accustomed the habitués of Brooklands, for he had a couple of good healthy bounces after striking the ground, and finally came to rest on the banking of the cycle track. It is interesting to note that M. Ducrocq was approached with the idea of inducing him to take part in the Aerial Post game from Hendon to Windsor, but he declined with thanks, as he could see no good purpose served by such a performance. It is, however, a fact that he was actually prepared to carry mails from Worlington to Carlisle if the strike had not fizzled out when it did, for in that case he would actually have been doing useful work.

Mr. R. F. McFie, as cheerily optimistic as ever, came in to argue about the future development of aviation. There are some who, on occasion, might think Mr. McFie slightly inclined to be downhearted. But is he? No! As a matter of fact, he has some really excellent schemes in hand at present, and THE AEROPLANE wishes him all success with them.

Lieut. Parke, R.N., now doing duty at Chatham, was in town after a flying visit to Eastchurch. He, like many other good judges, is enthusiastic over the magnificent workmanship of the Short naval biplanes, and told of one of these machines which has now flown 2,000 miles without a wire giving way. The engine of this machine has run 25 hours in the air, or roughly 1,000 miles, without being taken to pieces. So much for proper and intelligent care. Lieut. Parke also told of a new (D-2-P-1) machine, somewhere on the South Coast, with the engine in front, with which he hopes to experiment ere long. Such a machine, properly built, should have a great future.

Mr. Lewis Turner, the first British pilot to win his certificate under the new regulations, announced that he has been engaged to go to Russia by a British engineer located in St. Petersburg, who has constructed a big biplane on original lines. Turner is a good sound flyer, and he can be depended upon to make the machine fly if it is capable of doing so. There is a great future for aviation in Russia, and THE AEROPLANE wishes Lewis Turner every opportunity of advancement.

Mr. W. D. Johnstone, just returned from Yorkshire, described the final disintegration of the old Howard-Wright biplane, which he had recently been flying so well at Brooklands. He was due to do an exhibition flight at Leyburn on Saturday last, and at 5 a.m. had his machine out in flying order, the engine giving full power and the machine lifting well. As he left the starting-ground the engine began to

falter and finally stopped, the machine coming down with its tail on a stone wall, breaking up the after-part of the machine, which then proceeded to stand on its head, breaking the elevator, both main planes, and the chassis. Seeing the smash coming, Johnstone curled himself up and was shot clear of the machine as the engine turned over, the net result being one grazed knuckle. As the smash was merely a "pancake," he was certainly in no danger, but if the machine had come down head first on to the same wall he would probably have had considerably more damage done to himself. This will be Johnstone's last flight on a biplane, as he has now joined the staff of Vickers, Ltd., and is to put in a course of training in the Vickers shops at Erith with a view to becoming expert in the handling of the new Vickers R.E.P. engine.

E. V. B. Fisher, the new Vickers pilot, looked in to report progress with Vickers II., which should be at Brooklands in the course of the next week or so, its arrival being awaited with much interest.

## The Aeroplane.

166, Piccadilly, W.

Telegraphic Address: AERON, London.

Telephone: Mayfair 6407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
	s.	d.		s.	d.
3 months, post free	1	8	3 months, post free	2	9
6 " " "	3	3	6 " " "	5	6
12 " " "	6	6	12 " " "	11	0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.

# DAVISON

## REMEMBER THIS NAME

When requiring Aeroplane

**TANKS** { in brass, copper, oxy-acetylene welds, steel, or other metals, }

**RADIATORS**

**REPAIRS**

**OXY-ACETYLENE WELDING**



Best known manufacturer of these specialities in the motor trade.

Quotations free for oxy-acetylene

:: :: repairs or other work :: ::

A. C. DAVISON,

163, Arlington Road, Camden Town, London, N.W.

## THE AVIATION CLASSIC

Everyone interested in practical or theoretical aviation should obtain the COMPLETELY REVISED and POPULAR EDITION of

6s.  
net.

The  
**CONQUEST of the AIR**

BY ALPHONSE BERGET.

Demj 8vo, PROFUSELY ILLUSTRATED, 6s. net.

Recommended by the Royal Aero Club.

WM. HEINEMANN, 21, Bedford Street, London, W.C.

## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted ONLY—18 words **1/-**. 1d. per word after.

### MACHINES.

**FOR SALE**, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**BLERIOT** cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

**MACHINES**.—"Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The best, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

### ENGINES.

**WANTED**. Aero engine, anything from 35 to 60 h.p. Prompt cash for something good. Box 332, THE AEROPLANE.

### PROPELLERS.

**PROPELLERS**.—"Avro" Propellers of proven efficiency. 340 lb. thrust with 30 H.P. Green. Equally good results vantage from other engines.—A. V. ROE & Co., Brownsfield Mills, Manchester.

### CHAUVIÈRE'S FAMOUS "INTEGRAL" PROPELLERS

hold all Records, used by all leading Aviators. The Best Sole British Agents, Geo. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing London. Telephone: 1707 Holborn.

### EMPLOYMENT.

**WANTED**, Certificated Pilot Aviator as instructor Blériot and Farman. Salary and 50% all earnings. 3 months' certain engagement. State lowest terms and full particulars. SCHOOL, c/o AEROPLANE.

**CERTIFICATED PILOT-AVIATOR**—experience of six types—desires any opportunity for amateur flying, experimental or standard machines.—"AMPHIBIAN," c/o THE AEROPLANE.

**FOREMAN ENGINEER**, 10 years' motor and 3 years' aeroplane construction. Good practical experience with technical training. Home or abroad. Good references. Age 31.—WONHAM, 61, Coombe Road, Croydon.

### TUITION.

**TUITION**, with or without limited liability, Blériot XI.; personal instruction.—CHANTER, Aerodrome, Hendon.

**TUITION**.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. More certificates have been secured on the Avro than on any other "All-British" Aeroplane.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**LANARK AERODROME, N.B.** Tuition for R.Ae.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

### TUITION—Continued.

**BARRHEAD FLYING SCHOOL**. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

### INVESTMENT.

**AERONAUTICAL** Business for Sale, established three years, including two full-sized biplanes that have flown (British designed, patented) and patents for Control Lever, Automatic Stability, Brake, Disappearing Wheels. Well equipped works and flying grounds. Price £3,000 part cash.—MALLOW & Co., Adelphi House, Strand, London, W.C.

**WANTED** gentleman with £2,000 to start aviation scheme. Good security, sound business with sure success. No wild-cat scheme. Suit gentleman interested in aviation. Apply Box 330, THE AEROPLANE.

**GOOD** Business in Models and Aeroplane Parts for Sale, in Midland town. Excellent connection. Owner moving to London. Replies to Box 326. THE AEROPLANE.

### MISCELLANEOUS.

**"MANN" MONOPLANE**.—The model that is guaranteed to have flown the quarter-mile. Has your doctor ordered you to take plenty of exercise? If so, buy a "Mann" Monoplane and you will run a dozen miles in one evening without knowing it. Mr. C. B. Ridley writes as follows:—"The 'Mann' Monoplane is the most remarkable model of its kind." A customer says: "I have often purchased alleged flying models, but until I tried a 'Mann' Monoplane I never succeeded in getting even one decent flight. At the very first trial she covered nearly six hundred yards." 15/- brings this marvellous machine, post free and well packed. Parts for constructing same only 5/-; "Mann" geared winders, 5/-; "Mann" propellers, 3/6 per pair. Sole Manufacturers:—WILLIS BROS., 14, Wellington Square, Hastings.

**SECOND-HAND BAND-SAW**, splendid condition, Tilting Table, Fences, etc., for hand or power. £5.—MALLOW & Co., Adelphi House, Strand, W.C.

**JUST PUBLISHED**. Second Edition, Revised and Enlarged Demy 8vo, cloth. 294 pages with numerous illustrations and dimensioned Drawings. 10s. 6d. net.

### THE ART OF AVIATION:

A Handbook upon Aeroplanes and their Engines, with notes upon Propellers.

By R. W. A. BREWER, A.M.Inst.C.E., M.I.M.E., Member of the Institute of Automobile Engineers.  
London: CROSBY, LOCKWOOD & SON,  
7, Stationers' Hall Court, E.C., and 121a, Victoria Street, S.W.

**ETRANGERS**, qui aime la langue française et l'aviation abonnez-vous à

### LA FEUILLE SPORTIVE

2 fr. par an, France; 3 fr. par an, Etranger. Directeur: M. Gache, Professeur du Lycée Carnot, 5, Rue Salneuve, Paris.

**PHOTOGRAPHS**.—Original photographs of most of the illustrations in THE AEROPLANE can be supplied at short notice, half-plate size 1s., postcard size 6d., from THE AEROPLANE, 166, Piccadilly, W.

**POSTERS**.—To promoters of exhibition flights; aviators giving exhibitions on their own account; aerodrome proprietors, &c.—Striking posters in large and small sizes can be supplied in a day or two by arrangement with THE AEROPLANE, 166, Piccadilly, W.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, AUGUST 31st, 1911

No. 13.

## "BRISTOL" AEROPLANES ARE RELIABLE ... and STRONG.

Write for particulars of

THE "BRISTOL" MONOPLANE

TYPE "P"; and

THE "BRISTOL" BIPLANE

TYPE "T."

LEARN  
TO  
FLY

... at the ...

"BRISTOL"  
FLYING  
SCHOOLS

AT

SALISBURY PLAIN and BROOKLANDS.

They have the Finest Equipment and most  
Expert Tuition Staff in the Country

AND THUS

ENSURE RAPID PROFICIENCY.

SPECIAL TERMS TO NAVY AND ARMY OFFICERS.

Full particulars will gladly be furnished by—

The British & Colonial Aeroplane Co., Ltd.,  
FILTON, near BRISTOL.

"THE AEROPLANE," SEPTEMBER 7, 1911.

# THE AEROPLANE

12  
WEEKLY

Edited by CHAS. G. GREY. ("Aero-Amateur")

Vol. I.] [REGISTERED AT THE G.P.O.]  
AS A NEWSPAPER.

THURSDAY, SEPTEMBER 7th, 1911.

No. 14

## Our Naval Aviators.



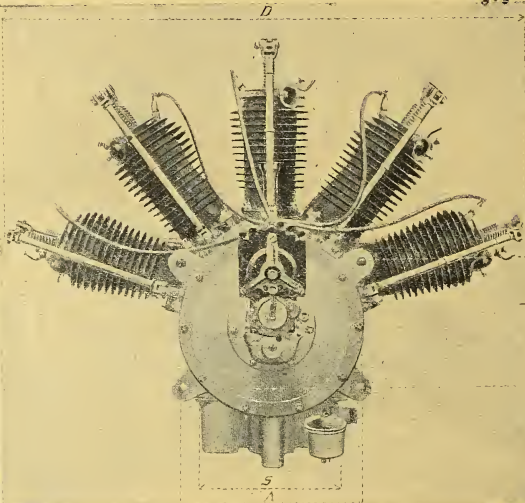
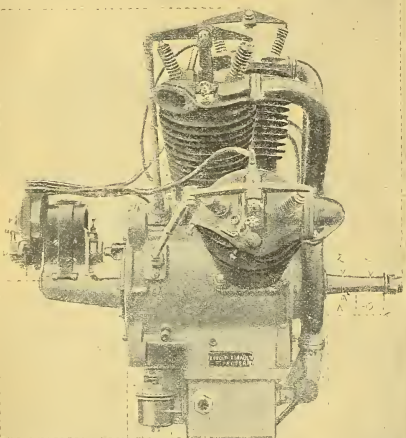
1. Lieut. Samson, R.N.  
3. Lieut. Gerrard, R.M.L.I.

2. Lieut. Gregory, R.N.  
4. Lieut. Longmore, R.N.

SMITHSONIAN INSTITUTION OCT 27 1960



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

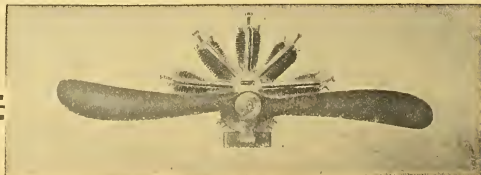
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	33.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	1.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
OUR NAVAL AVIATORS ... ..	313
EDITORIAL OPINIONS... ..	315
AIR CURRENTS ... ..	319
'TWIXT WIND AND WATER ... ..	320

	PAGE
THE FRENCH ARMY'S LOSS ... ..	323
THE WEEK'S WORK... ..	324
THE FLANDERS MONOPLANE ... ..	328
CORRESPONDENCE ... ..	330

## Editorial Opinions.

**Aviators without Certificates.** Owing to the number of exhibition flights which are now being made it seems opportune to call attention to the Royal Aero Club rule forbidding aviators who have not obtained their certificates to give exhibitions, for it is quite probable that a number of enterprising young men who have purchased aeroplanes may feel tempted to show off before an admiring crowd before they are properly capable of handling their machines.

There is, besides, a further point, namely, that unscrupulous persons may quite likely purchase machines which cannot really fly, and may persuade innocent people in the provinces to pay them to give exhibition flights which they cannot possibly perform.

Except for the financial loss, this latter method of procedure would be harmless enough, were it not for the fact that some of the machines which cannot fly are very much more dangerous to spectators than machines which can fly. For example, some of the old experimental machines of the Blériot type which are still in existence have a most dangerous habit of swinging round suddenly to the left and then charging into the crowd in such a way that even an experienced pilot cannot stop them, whereas a good driver on the same type of machine of modern date can steer it practically as closely as a motor-car, if he is not bothered by a side wind.

Possibly some readers of THE AEROPLANE who have only recently begun to take an interest in aviation may have forgotten the lamentable accident which occurred at Worcester last year, when a young man without experience in the handling of aeroplanes attempted to fly a Blériot machine which turned into the crowd and killed a woman, besides damaging sundry other people. It is to prevent such occurrences that the Royal Aero Club rule mentioned above was made, and every sensible person must admit that it is an extremely wise one.

Readers of THE AEROPLANE in the provinces will be doing a service to the sport if they will bring this matter to the attention of their local newspapers, in the hope that the said papers may, in the interest of their readers, deal with the matter, and so prevent any possibility of unqualified persons attempting to give exhibitions in their particular localities.

There are, of course, quite a fair number of men who can fly, and fly well, who have not yet obtained their certificates, very often for the good reason that they are so located that they have a difficulty in obtaining the attendance of a qualified official to observe their test flights, but it is always a simple

matter for such flyers to go to one of the recognised aerodromes and borrow a machine on which to do their qualifying flights; so there is really no excuse for anyone who can fly to go without his certificate.

Certainly, the mere possession of the certificate does not make a man a good flyer, but it is, at any rate, a fairly sound guarantee that he is capable of handling his machine in such a way as to minimise the probability of damage to spectators, and, after all, that is really the most important thing.

**Possible Penalties.** Some people with whom the writer has discussed this question have scoffingly asked what the Aero Club can do to an aviator if he gives exhibition flights without having obtained a certificate. The reply very simply is that the Royal Aero Club could do nothing directly, but it can make things distinctly uncomfortable for him ultimately if he persists in his misdoings.

In the first place, it can bar him from all competitions in this country or abroad, because all the chief competitions are held under the rules of the Fédération Internationale Aéronautique, and all competitors under these rules must hold a certificate granted by one or other of the countries belonging to the Fédération.

It is, of course, possible that the offender may not wish to enter for competitions; in such a case the Royal Aero Club can refuse to grant certificates to any pupils trained by him, and in the ultimate event of the offender not even wishing to train pupils the Royal Aero Club can refuse to grant certificates to anybody making use of an aerodrome used by him, so that ultimately the position of the offender becomes about as respectable as that of a racehorse owner who is reduced to running his horses at "Flapper Meetings," as the unregistered meetings held in defiance of Jockey Club Rules are called.

Furthermore, and this is a very important point, the International Aviator's Certificate is now so widely recognised as the hall-mark of an aviator that any coroner's jury is practically bound to take an adverse view in the event of an uncertificated aviator killing a passenger or a spectator, and almost any judge or jury would be considerably prejudiced against any uncertificated aviator who was sued for damage done to persons or property. Taking it all round, the life of the uncertificated aviator is not likely to be a happy one.

Finally, one word of advice to provincial readers of THE AEROPLANE who are good enough to bring

this matter to the notice of their local newspapers. There are, undoubtedly, a certain number of men who, knowing the disabilities of the uncertificated aviator, will pose as possessing their certificates, and before engaging any aviator to give exhibitions it will be as well if promoters of these exhibitions will communicate either with THE AEROPLANE or with the Secretary of the Royal Aero Club, at 166, Piccadilly, London, W., and make sure that the person with whom they are negotiating really does hold an aviator's certificate.

Since the recent article appeared in THE AEROPLANE on the subject of investments in commercial ventures connected with aviation, a number of letters have been received from people who are thinking of putting money into the aviation business to amounts varying from £250 upwards.

Quite a number of them are from young men who have got some money, and who want to take some active part in aviation themselves. To such young men a special warning should be addressed, for they are likely to receive quite tempting offers of partnerships in businesses where they are to receive a salary, which salary they will ultimately find will be paid out of their own capital.

One of the first points to be insisted upon before putting money into a concern is that that particular firm must have made a machine which has actually flown, and that is exactly where so many of the tempting-looking offers will be found to fail. Of course, where a man has some knowledge of aviation, and is smitten with a particular idea for the improvement of aeroplanes which has been brought to his notice, then he may be right in backing his opinion as to the efficacy of that idea by spending money on developing it, but these few remarks are not intended for the moneyed man who wants to finance a promising inventor. They are merely intended for the man who has a little money to invest and who wants to put it into a concern which is likely to become a paying proposition in a reasonable time.

For such a man by far the most sensible thing to do, if he be anything of a sportsman, is to go as a pupil to one of the recognised schools which is already at work and there learn to fly himself. If he does the thing properly, and spends sufficient time

over his learning to get to understand his machine thoroughly, he will, in doing so, learn enough about aeroplanes to judge for himself whether a proposition which is put before him for investment is a rational one or not, and if he goes to one of the schools at a place like Brooklands, for example, where a number of rival firms are collected, he will very quickly get to know the weak points of practically every machine which is turned out, and after a month or two of such training he ought to be perfectly independent of any outside advice.

The suggestion made in these columns recently that a superior brevêt should be instituted has been favourably received by many aviators, who realise that the man who habitually makes good cross-country flights should be placed in a different class from the man who, although perhaps a good sound flyer, confines his activities to flying round an aerodrome, where he knows every square foot of ground and every *remou* by heart. The number of French civilian pilots who have entered themselves for the French military superior brevêt, which involved three flights of 100 kilometres each across country, shows that the same feeling is strong in France, and it is to be hoped that before long an International Higher Certificate will be instituted.

Besides this, however, there exists a distinct feeling that the ordinary certificate tests should be made more searching, if not actually more difficult. One most sensible suggestion, put forward by a man who has been thoroughly in touch with aviation from the beginning, is that before a certificate is granted the candidate must, besides passing the present tests, bring evidence to prove that he has spent a certain minimum time in the air doing solo flights.

At present a pupil at a good school may have three or four flights with a good instructor, may do ten minutes or a quarter of an hour's rolling, and then, after perhaps half an hour or an hour's flying by himself, in stretches of ten minutes or so, may go and do his certificate flights straight away. The probability is that all this flying has been done in calm weather, and the net result is that we have a certificated aviator, eligible to give exhibition flights and to enter for competitions of any magnitude, who has in reality but the haziest ideas of the elements of airmanship—using that word in its true sense.

At present a pupil at a good school may have three or four flights with a good instructor, may do ten minutes or a quarter of an hour's rolling, and then, after perhaps half an hour or an hour's flying by himself, in stretches of ten minutes or so, may go and do his certificate flights straight away. The probability is that all this flying has been done in calm weather, and the net result is that we have a certificated aviator, eligible to give exhibition flights and to enter for competitions of any magnitude, who has in reality but the haziest ideas of the elements of airmanship—using that word in its true sense.



The new French Wright, built by the Astra Company on Avro lines. Note the geared-down tractor.

# GREEN'S ALL BRITISH AERO ENGINES

are Reliable, Strong, Light and Highly Efficient.

Many Records have been made with these famous motors. They have been adopted by H.M. War Office, and a Green was the only British Engine to finish the £10,000 Circuit of Great Britain. It had all parts sealed and intact.

Average weight 4 lbs. per h.p. Two sizes, 30-35 h.p. and 50-60 h.p.

Particulars on request.

THE GREEN ENGINE CO. (Sole Licensees under the Green's Motor Patents Syndicate, Ltd.) 55, Berners St., London, W.

MAKERS FOR THE PATENTEES—THE ASTER ENGINEERING CO., LTD.

E.H.G.

THE NEW TYPE B

## VALKYRIE MONOPLANE

HAS NOW BEEN TESTED AND HAS PROVED AN UNQUALIFIED SUCCESS.

ESPECIALLY DESIGNED FOR MILITARY SERVICE.

THREE TYPES: 40-80 miles an hour. FROM £280.

All Three Types Flying Daily at Hendon. Tuition Free to Purchasers. Particulars on request

THE AERONAUTICAL SYNDICATE, LTD.,

Established March, 1909,

At the Flying Ground, Collindale Avenue, West Hendon. N.W. (6 miles from the West End).

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



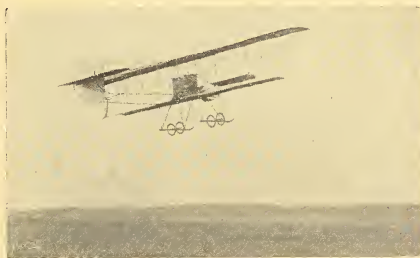
Eight Types

### Monoplanes

From 40 to 80 miles per hour

### Biplanes

From 36 to 50 miles per hour.



Catalogue on Application.

Winner of De Forest Prize



The suggestion is that the candidate for a certificate shall, after the passing of the proposed rule, be required, in addition to doing the present ten figures of eight, two landings, and one height test, to bring proof that he has spent at least four hours in the air alone on the machine, and shall be submitted to examination by a small committee of aviators of acknowledged ability in order to show that he has a fair working knowledge of the theory of practical aviation.

By "theory," it is not intended that he shall be questioned as to the use of the formulæ beloved of mathematicians, and usually based on unverifiable data, but that the candidate shall answer questions on "what to do and how to do it" in certain emergencies.

For instance, how many certificated aviators could suggest a course of action which, in the event of the front elevator of a Gnome-Farman jamming, or its elevator control wires breaking, would bring the machine to the ground with some chance of avoiding a wholesale smash? And how many could tell off-hand the approximately correct tensile strength and

the gauge of wire which it is safe to use in repairing any given part of their machines. Without concocting "catch questions," there are plenty of points such as these which an aviator ought to know in the interests of his prospective passengers, and, indeed, for the general good of aviation, before he is allowed to disport himself at large with human lives at his mercy.

It is to be hoped that both the Superior Breveté and a more searching test for the Aviator's Certificate will commend themselves to the powers that govern aviation, and that so we shall diminish the number of "tickets-while-you-wait" pilots, and consequently diminish the already astonishingly small number of serious accidents.

#### A Word of Advice.

A most sound and interesting article has recently appeared in *L'Aéro* by M. Vendome, a well-known French constructor. The article is too long to be quoted at length; but its concluding words are so excellent that we append a translation:—

"On no account attempt at first to build a racing machine. The first thing is to build a machine which will leave the ground and fly—however slowly. Speed will follow in due course.

"With this idea the first machine should be of large surface, with heavily cambered wings. When its particular tricks of handling have been thoroughly learnt, then is the time to experiment with flatter and smaller wings, and gradually to increase the speed of the machine."

#### The Uselessness of Parachutes.

A correspondent, writing from Handsworth, suggests the use of parachutes as a safeguard against aeroplane accidents in case of engine stoppage. Of course, the notion of using parachutes has been advanced many times, but of all the aeroplane accidents which have occurred the writer cannot recollect one in which a parachute could have been of use. It must be remembered that a parachute needs a drop of anything between 50 and 100 ft. to come into operation, and occasionally even more; whereas practically all the fatal accidents have occurred through something going wrong very much too close to the ground for a parachute to operate.

Nearly all the accidents, in fact, have happened while actually in the act of landing, and none of them, so far as can be gathered, at a greater height than about 200 to 300 ft. In order to give time for the pilot to realise that something was wrong, and that he had better take to his parachute, and then to allow time for the parachute to operate, the machine would have to collapse at a height of something well over 1,000 ft.

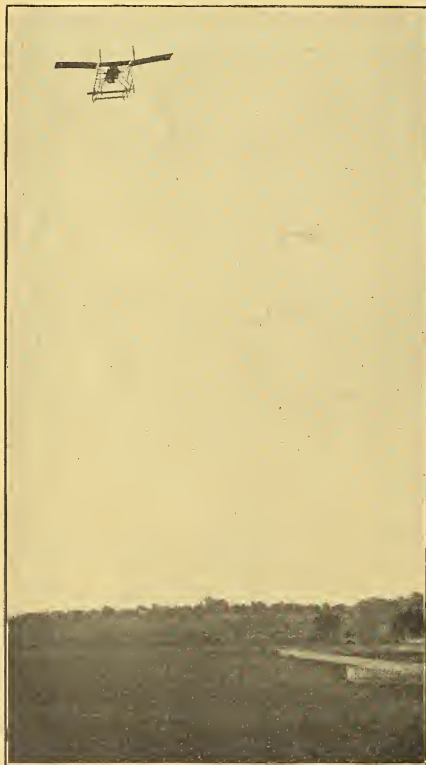
As regards the correspondent's notion of needing a parachute in case of engine stoppage, this, of course, shows that he is not sufficiently well informed on aviation matters to realise that a descent *en vol plané* with the engine stopped, even if that stoppage be involuntary, is very much safer than a descent by parachute, for if the machine is anything like a decent glider, as practically all machines are to-day, the pilot has full control over it, and can land practically where he likes, within a very large radius; whereas in a parachute there is no control over it at all.

#### Concerning Models.

Some few readers of *THE AEROPLANE* have inquired why so little space has been devoted to models. The reason is the very simple one that since the racing monoplane type of more or less "freak" model has been evolved there has been little in the way of novelties to describe. However, when a really good model is produced, *THE AEROPLANE* will always be pleased to have particulars of it, and will publish descriptions of it as soon as space permits. Will readers please send along descriptions of anything good they may wish to make known?

#### French Legislation.

M. Augagneur, Minister of Public Works, has submitted a scheme for aerial legislation to the French Ministry. In his scheme, aeronauts and aviators are to be licensed and their machines are to carry numbers, just as in the case of motors, and no machines are to be flown outside aerodromes without being licensed.



A Valkyrie coming down at Hendon.

## AIR CURRENTS.

## The Theorist.

It was the expert's friend that gave me the first hint of the revolution to come. He buttonholed me in the street, and told me what a brainy chap the expert was. "Met him in the train, you know—have to work for my living—not like you lucky devils." It appeared that his friend had an *idea* (the parachute safety device again, thought I), and as I "knew all about aeroplanes" (capitalists please note!), would I "knock it in shape for him," and "tell him how to get the money for it?"

These people think that an inventor lives by having inspirations at intervals and then holding out his hand for a cheque. I dodged him successfully for a day or two, and then collided with him and the expert, when doing a quick, right-hand banked turn into the High Street.

"Mustn't talk here, you know—can't be too careful—come round—next week then—mind you do."

I went, for my sins. A glance round the expert's room in search of plans or models confirmed my suspicions, and a second one, at the sidebar this time, also drew blank, so I prepared for the worst.

The great man was a bit diffident at first; I think he feared to trust me with the great idea when it came to him, but after a few false starts it came. "The propellers, you know, they don't pull hard enough. You want a sort of pump, and two things—big things—like gramophone trumpets. You suck the air in front of the aeroplane and blow it out behind."

"But a propeller does all that. Moreover, a good one weighs only a few pounds, and returns over 70 per cent. of the energy imparted to it. Your apparatus would weigh hundreds of pounds, and could not possibly be efficient."

"Oh! (with great pride) I'm not a practical man; I can't go into details—a sort of—"

"But really, sir, one can't tackle this sort of job until one's studied the subject, you see."

"Oh, that's all right. You have a sort of pump and two—"

"My dear sir, you—"

"A sort of pump. You suck—"

"But—"

"Like gramophone trumpets—"

I fled. And as I trampled on the expert's geraniums in my panic-stricken retreat, "sort of pump" floated at me in plaintive tones through the open window.

C. R. F.

## The Ingenious Inventor.

Mr. W. Wentker, of Bowes Park, sends an advertisement from a local paper showing a novel way in which an inventor, a Mr. E. H. Thales Drake, has chosen to bring his inventions before the public. He advertised a demonstration of his inventions for "submarine and aerial locomotion" in Finsbury Park quite recently, and there, before a small crowd and one or two Press representatives, he explained the working of a flapping-wing machine, and stated that drawings and photographs will be sent to the leading papers of the world. The AEROPLANE has not yet received its copies, but doubtless they will arrive in time. The idea opens up possibilities, and one can imagine the officials of the Army "Aircraft" Factory, for example, demonstrating models of some of their wonderful inventions to an admiring crowd in Hyde Park on a fine Sunday afternoon.

They were discussing the effect of ground surfaces on wind currents, and the experienced cross-country flyer had announced that there was always an upward current off a bright green surface. Said the local scientist, affected by a sudden brain-wave, "Then why not grow mustard and cress on the under side of the planes, and you'll be able to carry a permanent up-draught about with you, and always have an upward lift? It would decrease your gliding angle immensely."

Some of the French *mécas* over for the "Circuit" met our weird non-alcoholic drinks for the first time. Two of them went to the "Blue Bird" demanding beer. Mrs. Billing, not having a licence, gave them ginger-beer—good stuff and plenty of ginger in it. When the *mécas* had done coughing, one of them ejaculated: "Mais qu'est ce que c'est que ça? De la bière poivrée?"—"Peppered beer" is not a bad name for it.

## The Spread of Knowledge.

She—Yearning for information.

He—The Youth who knows.  
Elderly Female—Probably Prospective Mother-in-Law.  
Scene—The "Free Enclosure," Hendon; Bank Holiday.

She: "Here comes one, I can hear it buzzing."

He: "I wonder if it's one of those square ones."

(Enter Intrepid Aviator on a "Baby" White.)

She: "There, look, it's an aeroplane."

He: "No it's not, it's a Molliplane." (Presumably a perverted edition of Monoplane.—Ed.)

She: "Why do they call it a 'Molliplane'?"

He: "Oh, 'Molly' is Latin for double, and those square ones carry two people."

She: "I wonder how they make them turn round."

He: "Why, they have two stays at the side to guide it."

Elderly Female: "Here comes another."

He: "Yes, that's an aeroplane. Do you see the man on top?"

Elderly Female: "I suppose those large things underneath him [wings, dear reader] are put to prevent him looking down and getting giddy."

He: "Yes, I expect so. Where's the Molliplane gone to?"

She: "Didn't you see? It's just run into its kennel."

(Exeunt over two five-barred gates and seven barred-wire fences, leaving portions of lingerie on each.) W. LE M.

"It has been notified at Aldershot that when an airship is seen close to the ground and flying a signal consisting of a red cylinder hung below or flying behind (meaning 'I am going to land and need assistance') troops in the immediate vicinity will help in any way that may be required. They will usually be wanted to catch a rope which will be dropped and pull the vessel gently to the ground. Silence must be maintained in order that they may hear any instructions shouted from the airship."—(*Morning Post*, August 24th. This seems quite a pretty idea, though one hopes that the willing helpers at the terrestrial end of the rope will not pull too hard! But when an Army dirigible does go out for a little fresh air and exercise would it not really be more within the sphere of practical politics simply to send a man to walk in front of it with a red flag?—M.L.E.

It is understood (on the worst possible authority) that, in view of his recent valuable services during the manoeuvres at Aldershot, the genial Cody has been specially invited by the War Office to join the Boy Scouts. He is said to have a particular affection for that interesting body, and it is anticipated that the uniform will prove peculiarly becoming.

## Things we have heard from the Little Bird.

We understand that with a view to awakening interest in aviation among the youthful members of the community the well-known firm of Messrs. Harmsway, of Settemile House, intend publishing a series of "penny readuls" in the near future. The theme will be the adventures of one "Aeroplane Jim" on his zoo-h-p-h. scaroplane.

Messrs. Shellfishes are supplying an aeroplane bonnet for lady passengers which is quite the last word in *chic*. The front part is fitted with an imitation elephant's tusk, so that if anything goes wrong the passenger can attract the aviator's attention by prodding him in the back. We are sure this ingenious arrangement will appeal to pilot and piloted alike.

Messrs. Doitwell are placing on the market a new aeroplane seat, the "Cosiccom." This is handsomely upholstered in Tiger skin leather, embossed with a design of Blériot monoplane in gold. A cigarette box and ash tray are fitted at one side, and a receptacle for a glass of whisky and soda at the other. It is improvements of this kind which help to make the art of flying what it is.

A marriage will shortly take place between the Duke of Beechwood and Miss Birdie Flawday, of the Frivolity, whose classical dancing in a costume of pegamoid and wire strainers has attracted countless thousands. We understand the happy couple will spend their honeymoon in Sky.—D.M.H.



## 'Twixt Wind and Water.

SOME NOTES FROM SHEPPEY.—By C.G.G.

Where actual flying is concerned, my luck at Sheppey is dead out. Whenever I go to that salubrious isle it is either raining, blowing a gale, or else something extraordinary prevents flying. Last week quite kept up my average, for when I got there the naval men were all nicely dressed in clean collars, walking sticks, nice ties, and other accessories of an effete civilisation, instead of jerseys and overalls—a saddening sight, and conduct unbecoming of officer-aviators. It was explained to me that I must speak gently to them, for at the moment they were in a state of unstable equilibrium betwixt wind and water.

Their six months' training course, after securing their certificates under Mr. G. B. Cockburn's tuition, had expired the previous day, and the Short naval biplanes lent to the Admiralty by Mr. Frank McClean were now once more Mr. McClean's own property. Consequently there were four of the finest flyers in this or any other country, on the first really perfect flying day of the year since about last March, turned into mere earthworms.

What made it worse was that at the moment no one knew whether they were ever going to fly again. The Admiralty had not made up its mind whether it is going to go on with aeroplane work, or whether it will concentrate its aeronautic appropriation for the next decade or so on further futile efforts to coax that monstrosity at Barrow to get up into the air and stay there for a few minutes.

So the men who can really fly were, so to speak, waiting for the spin of the coin; heads, wind, tails, water; heads they go on aviating, tails they go back to their ships. Let us hope it will be heads, for we have got at any rate four men fit to be put up against all the Connaeus and du Caylas the French Navy can raise.

Seeing that their official six months is finished, it seems a fit and proper thing to review in brief what they have done. The number of their cross-country flights has not been kept, for practically every flight they make is across country; but one of them, Lieut. Gerrard, R.M.L.I., holds the world's record for cross-country flying with a passenger, having covered 129 miles in 4h. 15m. in a very nasty cross wind. At the time of the European Circuit all four of them, two at a time, flew to Dover and back, over the vilest of country.

Lieut. Samson, R.N., flew to Brooklands, and Lieut. Longmore, R.N., flew the same machine back again. Lieut. Samson flew for 4h. 58m., putting up a British duration record, and all four of them habitually fly over into Kent and back, and generally disport themselves over the Isle of Sheppey.

So far as I could gather, for they are all oysters for modesty so far as their own deeds are concerned, they have not kept any record of their individual mileages, but I was taken into one of the sheds and introduced with pride to "Little Willy," their favourite Short biplane, whose mileage, piled up by all of them in turn, already runs to over 4,000. Besides "Little Willy" there are the other two Naval Shorts, No. 34 and No. 38, whose records are 3,000 and 2,000 miles respectively.

Incidentally, I was told, by those who ought to know best, that the total amount of breakages in that 9,000 miles' flying would be covered by about £25. If anyone can find a car which only costs £25 for repairs in 9,000 miles running he has got a good thing, and it is really marvellous that four aviators should have put up such a record. And, mark you, they are not fair weather flyers, for they habitually fly in winds up to thirty miles an hour, even if they are gusty.

Of course, if you venture to comment on their freedom from smashes, you are met by the explanation that it is all Short's fault, that you can't smash a Short machine unless you try very hard, or that the Short chassis will land without damage on a cast iron tree trunk, or some equally convincing reason. As a matter of fact, quite a large share of the credit does belong to the brothers Short, for I defy anyone to find better workmanship anywhere, and it is difficult to find any as good.

I only wish some of our moneyed young men who are so fond of going abroad to buy machines would have the common sense to go down to Sheppey and have a real look at the Short machines. If the man who does it has any eye for workmanship, I will guarantee that he will never want to look for anything better, and that most of the foreign-built biplanes will give him "cold feet" (to use a phrase which expresses much where aviators foregather) merely to look at them after a Short. It has always been admitted that Short's workmanship is good, but people used to object that their



Lieut. Gerrard, R.M.L.I., and Lieuts. Gregory and Longmore, R.N., alongside the Short Biplane belonging to the Hon. Maurice Egerton. Note the protective "nacelle" for the pilot.



# A. B. C.

## AEROPLANE ENGINES.

40-h.p.	4-Cylinder	Vertical
80-h.p.	8	„ “V” Type
120-h.p.	12	„ “V” Type

**UNDER 3 lbs. PER B.H.P.**

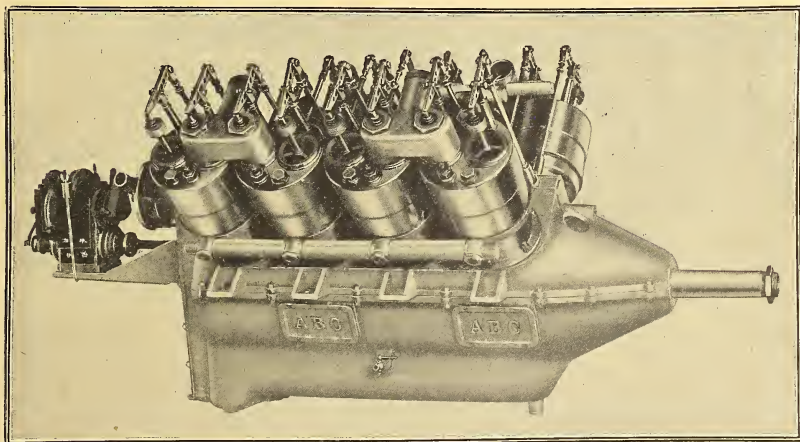
HIGHLY ACCESSIBLE.

LUBRICATION UNDER PRESSURE TO EVERY BEARING.

CYLINDERS MACHINED FROM SOLID STEEL.

NO OIL PIPES AND NO MESS—OILING SYSTEM COMPLETELY ENCLOSED.

NO OIL TANKS, PUMPS OR LUBRICATORS REQUIRED.



MANUFACTURED BY  
**THE ALL - BRITISH (ENGINE) CO., LTD.**

LONDON  
AGENTS:

**The Universal Aviation Co., Ltd.,**  
**166, Piccadilly, W.**

machines were unduly heavy. Certainly they were heavier than some of the gimcrack affairs turned out abroad; but for practising and experimenting over the dykes and banks of the Isle of Sheppey they were none too heavy, if proper engine power had been available at the time. But to-day, thanks to experience gained on the old heavy machine, the modern Short is as light as anything of its type, and a great deal stronger than most.

Personally, I still object to the front-elevator, engine-behind type of machine as much as ever, and more and more aviators are coming round to the same view; it is, therefore, with considerable satisfaction that I can chronicle the fact that the Shorts are now going ahead with the biplane which Mr. Horace Short designed in conjunction with the late Cecil Grace, and also that they have got a new monoplane, to which the well-known Short chassis has been adapted, almost completed. These two machines will be of very great interest when they appear.

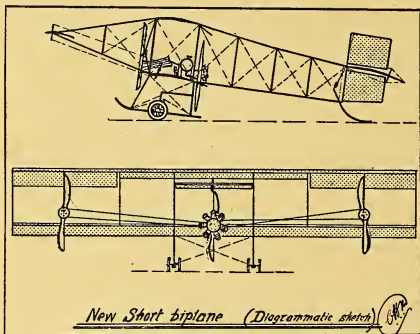
#### The Latest Short Machine.

But the "star turn" of the Short factory this year is the new 100 h.p. biplane, which should have made its trial trips by the time these notes appear. In its general outlines the



Above, L'ent. Gerrard, R.M.L.I.; and below, Lieut. Samson, R.N., on their record-breaking Short Biplanes

machine is an ordinary biplane, but somewhat larger, heavier, and stronger, the chassis in particular being absolutely colossal. But the speciality of the machine is the power plant. It is fitted with two Gnome engines. One is, as usual, behind the aviator, and fitted with an ordinary 8 ft. 6 in. direct coupled propeller. The other is in front, under a housing, only, instead of having a "nose" with a propeller on it, as in the case of the ordinary monoplane, it carries behind it, on the place usually provided for the propeller, a couple of chain-wheels which drive chains fitted à la Wright, and these "make to circulate"—as the French don't say—two tractor screws, also of 8 ft. 6 in. diameter, but geared down, and so of greater pitch than the single propeller, which runs faster.



It will be remembered that the propeller of a Gnome on the ordinary engine-behind biplane is in front of the engine, and the after engine on the Short is the same, but the front engine is fixed the other way round, and so the engines revolve in opposite directions, thus balancing the gyroscopic forces.

The propellers driven by the front engine run in opposite directions, the left-hand chain being crossed to reverse the left screw. They are so located that the area of maximum air propulsion, i.e., the greatest effect of the slipstream, cuts along just under each plane and acts directly on the ailerons when they are moved. The idea in this is that, as proved by a number of experiments, no matter how broken or turbulent the air may be, when once it has been caught by a propeller it is straightened out and flung back in a uniform stream, the propeller acting, so to speak, as an aerial sausage machine which delivers a uniform cylinder of air behind it. In this way, any gust striking the machine sideways should be seized by the screws, straightened out and delivered by them in a straight line on to the outer portions of the wings and on to the ailerons, so that its reaction lift will always be straight and uniform. It is a most interesting theory, and the experimental flights should be highly instructive.

The pilot is perched well up in the middle of the lower plane, and the engines themselves are so well held down on such very hefty bearers that there is practically no chance of the rear engine turning over on to him unless the machine comes down vertically on its nose, and even then there is so much heavy stuff in front of him that the back engine would probably be saved, as well as the pilot. Altogether the machine suggests great possibilities, for Mr. Horace Short tells me that it will fly with the front engine alone, thanks to the efficiency of the geared-down screws, and that the rear engine is practically all reserve power, consequently even with three or four cylinders misfiring the machine will have plenty of lift left, whereas a single screw machine with a single 100 h.p. engine would scarcely fly under similar conditions.

The machine has been built for Mr. Frank McClean, who, poor chap, has been laid up with sciatica practically ever since he came back from eclipse-hunting in the South Seas. It will be remembered that he bought the Universal Aviation Company's Birdling monoplane just after the Circuit of Britain, and the poor little thing is now in pieces at Eastchurch, having been the victim of some stray sheep which wandered across Lieut. Samson's path when he was landing a day or two before I was there. Not being used to the machine, on which he was making his first monoplane flight,



he reached for his switch alongside, as it is placed on the Short, and forgot it was on the control wheel in front, a very natural mistake. Unfortunately, the short delay brought him too close to the sheep, and to avoid running into them he tried to jump over them, but, the throttle not being full open, the machine pancaked just beyond and smashed itself fairly completely.

The only flyer while I was at Eastchurch was Mr. Egerton, who had been busy all day experimenting with his engine. Mr. Ogilvie was away, and Mr. Travers was on some special work in the factory which left him no time for flying. Still one learns more when there is no flying going on and the owners and constructors of machines have nothing better to do than talk, and that day at Eastchurch was highly educative.

It is a constant source of wonder to me that the thousand and odd members of the Royal Aero Club do not go down to their own flying ground more often, for it is really a most entertaining place, especially when one can get any of the regular inhabitants with a little time to spare to tell what is actually going on.

### The French Army's Loss.

Everyone connected with aviation must condole with the French Army in the loss of two such fine flyers and good soldiers as Captain Camine and Lieut. de Grailly, who were killed on Saturday last when flying from Buc to join in the manoeuvres in the East. Both were pilots of the Rep. monoplane, and were the first aviators to be killed on this machine.

They left Buc together, de Grailly leading, and when near Naugis, flying quite low down and just clearing the tree-tops, Camine's machine came down on its nose; he was, apparently, thrown into the front of the machine, for a broken petrol pipe entered his head and penetrated to the brain. Otherwise, he was but little damaged, and would apparently have escaped if the pipe had missed him. The machine was damaged a good deal, but one wing was intact, which seems to point to a side-slip, probably due to a heat remou. It seems fair to assume that either he had no safety belt or that it broke; and it should also be noted that the latest racing Reps have little or no dihedral angle to the wings, so would have more tendency to side-slip.

Lieut. de Grailly, flying ahead, reached Nogent-sur-Seine half an hour after his comrade's fall. There his machine began to dive from a height of 1,000 feet, and it is said by some that it caught fire while in the air. However that may be, the machine certainly was on fire a second after striking the ground, and the unfortunate officer was badly burnt. His head, however, escaped the fire, which makes it seem probable that the machine was not on fire in the air.

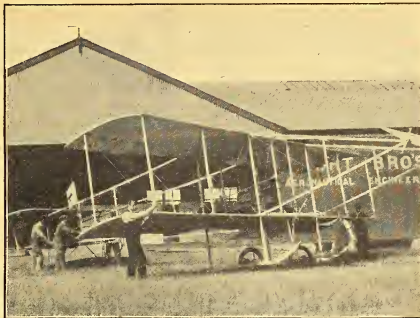
Poor de Grailly's father had gone to meet his son at the point of concentration at Vesoul, and was told there of his death.

Both officers possessed their military superior brevets, and had had a great deal of experience in the air. Camine belonged to the 5th Regiment of Engineers and de Grailly to the 8th Cuirassiers, the former being 32 and the latter 27 years of age.

As THE AEROPLANE goes to press news, which needs further confirmation, has come to hand suggesting *sabotage* of the machines. It will be dealt with next week.

### A New Height Record.

Roland Garros, on a Blériot, reached a height variously reported as 13,944 ft. and 14,000 ft. at St. Malo on Monday, September 4th, handsomely beating the world's record. The official figure will not be known for some days. The flight took an hour.



A Short Biplane leaving the factory.

### The Latest Pilots.

At the meeting of the Royal Aero Club Committee, held on August 20th, the following new members were elected; (Life) Lieut.-Col. Charles Oswald Smeaton, R.A.; (ordinary) Major-Gen. W. B. Barwell, Brigadier-Gen. David Henderson, Baron Adam Roenne.

The following aviators' certificates were granted: 120, C. O. Dahlbeck (subject to sanction of Aero Club of Sweden) (Farman biplane); 121, Lieut. L. V. S. Blacker (Bristol biplane); 122, Mrs. Hilda B. Hewlett (Farman biplane); 123, Walter C. England (Farman biplane); 124, Herbert Spencer (Spencer biplane); 125, Capt. D. Le Geyt Pitcher (Bristol biplane); 126, Capt. C. G. Hoare (Bristol biplane); 127, Lieut. R. H. C. Hall, R.N. (Bristol biplane).

### New Distance and Duration Records.

On September 1st G. Fourny, on a Maurice-Farman racing biplane, with a Renault engine, beat the world's record for distance and duration, his total distance being 720 kms. (or roughly 440 miles) and his time 11 hrs. The previous duration record was 8 hrs. 12 m., put up by Henry Farman on December 18th, and the distance record was about 385 miles, made by Jan Olieslagers on a Blériot.

### Pierre Marron's Death.

The fatalities of September 2nd, besides Captain Camine, Lieut. de Grailly, and J. J. Frisbie, included Pierre Marron, who was killed at Chartres, his machine catching fire afterwards. The many friends in England of M. Louis Marron, who took his certificate at Salisbury Plain, will be relieved to know that he was not the victim, as was feared.

### "To the Pioneers."

Out of the dawn, out of the void, conqueror of the air!  
Swiftly you swoop, hovering o'er, speeding afar—to where?  
East to the West, North to the South, reckless of miles you span—

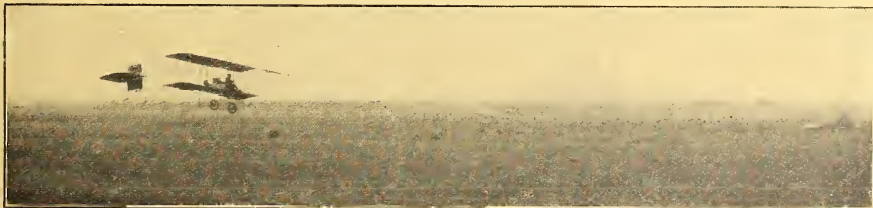
Strength that an unknown future sees, work of triumphant man!

Out of the dawn, out of the void, into the space beyond;  
Hard was the fight, bitter the cost—but science has waved the wand.

Praise shall be yours, due to your worth (the price man paid was dear);

Praise that our sons in years to come shall give you, pioneer.

JOYCE E. WEBSTER.



A Short Biplane landing. The photographs on this and the opposite page were taken by Mr. Oswald Short.



## The Week's Work.

## Monday, August 28th.

**BROOKLANDS.**—In morning Deperdussin school only out. New pupil, Garne, rolling, and Bell got two circuits out of school machine. Later, Hamilton ditched the machine, fortunately doing no damage except to the chassis, which had some struts broken. In evening quite a lot of flying, Blondeau-Hewlett school going strong, and Lieut. Snowden-Smith out again on the racing Blondeau-Hewlett after long absence. Spencer out carrying passengers, and Raynham on the Avro engine-behind biplane.

**THE PLAIN.**—High wind throughout day, with few and short intervals. During one of these Gilmour and Jullerot, on their Bristols, went up to see how bad it really was, and found themselves in wind well over 30 m.p.h. which often brought them to a dead stop.

**HENDON.**—Weather very unsettled, Hubert flying for about twenty minutes, but forced down by rain. Driver taking as passengers Mrs. Stocks and Lieut. Stopford later in afternoon. Gassler, of Chanter school, doing straight line flights in morning, Hamilton Ross also doing short flights in the evening.

## Tuesday, August 29th.

**BROOKLANDS.**—In morning no one out except Raynham. In evening Raynham taking passengers. Petre (the Monk) made short flight on the Hanriot.

**HUNTINGDON.**—Lieut. Barrington-Kennett on "Bristol 37" left Cambridge for Salisbury Plain, but forced down by wind at Papworth, near Huntingdon.

**THE PLAIN.**—Jullerot and Gilmour up again for more wind fighting, finding it impossible for any serious tuition work. In evening weather improved and all Bristol pilots out in force, Gilmour taking up Cockerell and Wheeler and giving Prier, the monoplaneist, his second biplane flight. Busted took up Mellersh and Lieut. Watts, Pizey took Smith-Barry, and Jullerot took Lieut. Newall, after making a solo.

**HENDON.**—Chanter school out practising. Work done by this school is considerable, and Chanter, Gassler, Buchanan, and Hamilton Ross all about ready to take their tickets directly the new engine is fitted in their Blériot. Gassler, who only joined the school last week, has been out doing good straight flights every morning this week. At 5.30 a.m. Copland Perry, on Valkyrie, out on school machine, and made quite an exhibition flight of 30 minutes. Rose to 200 ft., and then proceeded to make smaller and smaller circuits till the machine was banking in quite expert style. Concluded flight with two small figures of eight, and landed with perfect *vol plané*. Captain Loraine then took out same machine, and showed good progress.

## Wednesday, August 30th.

**BROOKLANDS.**—In morning Manisty out on Hanriot, Petre (the Monk) finished his brevet test flights on same machine. Kemp flying circuits and Petre (the Painter) doing straight flights on the Flanders. Raynham landed on the golf links, his Gnome letting him down. Got it going again and returned. Then took up a friend who objected to walking over a mile

to reach a point half a mile away, and landed him on the track itself by the Byfleet Road gates close to his lodgings. Passenger restarted engine, and Raynham got off the track and returned to the hangars, while the passenger went home to breakfast. Sound idea. If Brooklands authorities will make a landing place near Paddock some of us may be saved the Desert March round the new road. In evening Manisty and Petre flying, also Bertie Rippen, now returned to aviation and become a recruit at the Hanriot school. Hunter, of Dewsbury, doing straight flights on the Avro. Jack Humphrey brought out his large monoplane, which got off ground very easily—so much to his surprise that, on landing (which he did very well), he let go of the control in amazement. The machine rolled, in ever-narrowing circles, for quite a long time, and then slowly turned over with much dignity.

**HUNTINGDON.**—Lieut. Barrington-Kennett arrived at Port-holm 5.20 a.m. Gnome not up to the mark, so had ignition properly timed by Radley's engine-tuners during the day, filled up with oil and petrol, and started for Oxford 5.10 p.m.

**EDINBURGH.**—Fine flight by W. H. Ewen across the Forth. In morning a cross-country flight of some twelve miles, and in evening across Forth and back. All done on brand-new Deperdussin with a little 28-32 h.p. Auzani, which gives about 60 m.p.h. Excellent performance, for Ewen is not a light-weight by any means.

**THE PLAIN.**—Morning beautiful for flying, gale of preceding days vanished entirely. Harrison, Gibson, and Cockerell, Bristol pupils, able to go for solo flights, each making three figure eights. Pizey took Lieut. Watts and Smith-Barry. Busted took Mellersh and Lieuts. Watts and Newall, and Cadet Wheeler. Hotchkiss took Lieut. Newall. Prier followed by making first solo flight on biplane, of which he seemed to have complete mastery, afterwards taking Smith-Barry and Lieut. Newall for flights. In evening Gibson took brevet, observed by Capt. Kennedy, of King's Rifles, and Pizey. Gibson joined Bristol school on August 7th. At sunset Cockerell did fine solo flight.

**HENDON.**—Arrival of Lieut. Cammell from Cambridge, unfortunately marred by what might have been very serious accident. At it happened he escaped absolutely uninjured, but if he had been in an engine-behind machine one would not like to say what might have occurred. He came in sight about 4 p.m., and came down with fine *vol plané*, but unfortunately stiff breeze was blowing and he could not pull machine up before it had tried to enter No. 1 shed without waiting for doors to be opened, much to the detriment of said machine, to say nothing of severely shaking up the "Hope of Hendon" which was installed in same shed. Considering machine was travelling about 25 m.p.h. damage done was wonderfully little, total smash being two wings, propeller, the two *planches de bois*, and several small struts at the rear of the pilot's seat. Motor, with exception of a nasty shaking, was all right, though machine got nearly all inside shed before it stopped. Same day at 5 a.m. Copland Perry and Captain Loraine out on Valkyries, putting in good practice; 7.30 a.m. Copland Perry went up for brevet tests. Soon got to 300 ft., and com-



Lieut. Gerrard, R.M.L.I., on the record-breaking Short Naval Biplane.

pleted first flight in ten minutes; final *vol plané* faultless. Second flight done in equally short time. Owing to anxiety to land within a foot of observers descent was a trifle too sudden, and one small strut was damaged. Later Perry made another circular flight in order to satisfy official observers; descent this time being beyond reproach.

#### Thursday, August 31st.

BROOKLANDS.—In morning Petre (the Painter) got in two straight flights on the Flanders before breakfast. Petre (the Monk) and Manisty out on the Hanriot. Young doing circuits on Avro, after which Raynham took it out and landed twice inside the railings which are supposed to keep spectators off the aerodrome, the second time rolling right into the shed. In evening Blondeau and Snowden-Smith both going strong. Hunter wants friend in North to understand that he is only flying engine-behind machine for lack of anything better; peddling completion of genuine Avro, now nearly ready. Still remains faithful to the Avro-Goupy-Brégé type, and quite right. Pixton left for Salisbury, much to everyone's regret.

THE PLAIN.—In morning Harrison took his certificate, observed by Jullerot and Mr. Fitz-Morris, Secretary of the British Embassy at Constantinople. Harrison joined Bristol school on Aug 4th, and tuition, which was without a smash, therefore took just under a month. Cockerell made two more figure eights. Lieut. Stuart did a right-hand turn very neatly, and Lieut. Watts, after going for passenger flight with Jullerot, did two straights. Lieut. Newall, Cadet Wheeler, and Smith-Barry also taken for flights, and Jullerot did exhibition flight. Evening very windy, and not much flying possible. Smith-Barry and Lieut. Newall gave flights, Jullerot taking latter to 1,200 ft. Hotchkiss finished up with a solo.

HENDON.—Fog responsible for late start, and at 8.5 a.m. the Valkyrie pilot flew before handing school machine over to Captain Loraine, who made an abrupt landing. Though machine spun round almost in its own length, Valkyrie undercarriage stood strain well, and machine will again be in commission in a day or so.

#### Friday, September 1st.

BROOKLANDS.—Young, Noel, and Hunter out on Avro engine-behind biplane, Raynham experimenting with "lemon cutting" on a disguised petrol funnel stuck on top of a thin stick, a batten fixed to the end of one plane being used as a sword—sort of combination of Boadicea's chariot and a military tournament trick. Raynham, when he gets a really good machine, should do great things; his judgment of speed and distance is simply marvellous. It is rumoured that he was seen measuring with a tape the new iron footbridge over the track, to see if there really is room to fly under it. Petre (the Monk) up on the Hanriot. Petre (the Painter) doing first circuits on Flanders, and was very successful, but misjudged his height when descending and hit the ground with a heavy sideways drift without flattening. Damage wonderfully small—speaks volumes for construction of machine—right wheel smashed, left tyre burst, right rear wing-spur cracked, pillar smashed. Considering that she hit full on the right wheel and then ploughed the ground for 50 yards sideways on the skid and right wing-tip this is not very serious.

THE PLAIN.—In spite of fog, conditions sufficiently good, and after Smith-Barry and Lieut. Newall had been taken for flights Cockerell was observed for his certificate by Jullerot and Capt. Pitcher. Cockerell, who joined the school eighteen days ago and went through his tuition without a smash, performed his test very creditably, making two fine *vol planés* right on to the mark. Tuition was very brisk throughout morning, and several more pupils ready for brevets.

HENDON.—Hamilton-Ross, of Chanter school, doing straight flights in evening. Seems to find some trouble in banking, but there is no doubt he will be ready to take his ticket by the time the new machine is ready. Gassler also out.

CARDIFF.—First sight of an aeroplane given by Hucks on Blackburn flying over from Weston-super-Mare.

#### Saturday, September 2nd.

BROOKLANDS.—Young and Raynham out on Avro with engine behind. In afternoon Raynham out again in a nasty puffy wind, and many heat *remous*. Lieut. Snowden-Smith appeared with his fast little engine-behind biplane, flying excellently. Has not been seen out much lately owing to calls of duty. A welcome reappearance. Late in evening Petre turned out Henrietta, and did a couple of rather startling circuits, including a super-banked turn, after coming up against wind, worthy of a Morane—probably unintentional.

HENDON.—Graham-White school out all day. Driver giving passenger flights. Gassler and Ross steadily improving.

#### Sunday, September 3rd.

BROOKLANDS.—A very busy day. First thing out was rebuilt "Big Bat." Astley and Lieut. Harford had sat up all night so as to get out at dawn and do a cross-country flight. Went to sleep in chairs, and got up at 6 a.m. with sun shining and little birds singing. Apparently sun too strong for "Bat," which flopped lazily off the ground, got up to 40 or 50 feet, rolled over sideways, and came down on a wing-tip and smashed chassis and wing. Probable cause being engine not fully tuned. Soon after, Raynham, Noel, and Young all out on engine-behind Avro. Bell brought out school Dep. earmarked "for rolling only," and took it up to 200 ft. Bell weighs 12½ stone, and the engine is 28-32 Anzani, so machine is now to have an old 25 Anzani put in, in hopes of keeping it on the ground. Petre out on Henrietta, and then Manisty, who broke chassis struts (his breakages must be mounting up by now). Snowden-Smith also out in morning. In evening, when sun went down and all good little *remous* in bed, Snowden-Smith up alone, and with passenger, flying beautifully. Then Spencer on his own biplane. Discovered that this is 6 in. less in chord than Farman, and 1 in. less in camber, thus accounting for speed and climbing capacity. Raynham, on engine-behind Avro, doing very pretty flying. Has now invented a Dutch Roll, performed by doing quick right and left banked bends of small radius. Very nice so long as machine stays in one piece. Longstaffe on Blondeau biplane getting round well, but evidently having trouble with new engine. Abbott, having his usual aerial week-end, took out same machine, engine worse still owing to his unfamiliarity with its air capacity, and flew nearly length of aerodrome with tail hanging gracefully 2 ft. off ground and main planes 8 or 10 ft. off. A horrid sight. Afterwards got mixture right and flew well. Hunter then out on E.B. Avro doing good circuits. As darkness set in Petre doing fast circuits well up on Henrietta, but apparently underpowered, tail down, and dropping on corners.

HENDON.—Hubert on Farman went up for local height record, and made a fine spiral *vol plané* from 2,300 feet with engine stopped. Driver and Hubert both carrying passengers; Driver took one passenger for a cross-country flight. Gassler and Ross at work as usual.



C. Howard Pixton with a passenger on his Bristol.



### Hucks Crosses the Bristol Channel.

On September 1st B. C. Hucks left Weston-super-Mare on his Blackburn for Cardiff. At 5.30 a.m. he was over Cathays Park. At a height of about 2,000 ft. he bore over the City Hall and then over Gabaiva and Llandaff, where, with a big sweep, he turned, dropping a hundred feet or so. Then, rising steadily as he completed the circuit, and going still higher, he went away on the return journey.

After steering in the direction of Marshfield, Hucks, picking up his bearings, made a beeline for Weston. At 5.40 he was near Roath Dock, whence his progress across Channel was watched by hundreds of workmen. The flight was made without a hitch. A steam launch followed the aviator's track to the Welsh side, and it also conveyed him on the return journey.

Hucks started at 5.10 and landed again at Weston at 5.50. The Weston correspondent of the *South Wales Echo* writes: "B. C. Hucks made an early morning trip on his monoplane from Weston-super-Mare to Cardiff and back. The aviator's intention was only known to a few persons, and his departure at 5.10 o'clock was witnessed by but a score of spectators. The morning was very fine and Hucks made a beautiful ascent, rising to an altitude of 16,000 ft. [A handsome beating for the record, but it is feared it is only a misprint for 1,600 ft.—Ed. THE AEROPLANE.] After circling, he headed straight for the Channel, passing over the British encampment at Worlebury Hill. He wore a cork lifebelt, and a motor boat was stationed in mid-channel in case of mishap.

"A gusty wind compelled him to steer in the direction of Newport, but he ultimately reached Cardiff flying over the city at a height of 2,000 ft., dropping messages for the Press and a quantity of handbills announcing his four days' demonstration at Weston next week.

"On the return journey a tricky wind compelled Hucks to alter his course again, but he made a splendid descent, planing down from 2,250 ft. At times, with the wind behind him, Hucks estimates he reached a speed of 70 m.p.h. Owing to cross winds in the Channel, Hucks considers it dangerous to attempt crossing except under the most favourable climatic conditions."



B. C. Hucks flying at Burnham, Somerset.

Mr. C. E. Manton Day, Hucks' manager, writes to THE AEROPLANE: "The wind was fairly calm on the land when the plane was wheeled out. Hucks made a prompt and excellent ascent, but found the conditions altogether different immediately he began to cross the water. He was carried a considerable distance out of his course, but, after getting clear of the Channel air currents, was able to steer an accurate course for Cardiff; he flew at altitudes between 1,500 and 2,250 ft. A splendid descent terminated what was undoubtedly the finest flight that has been made in the West Country, and every credit is due to this plucky young British aviator." Mr. Manton Day has made arrangements for Hucks to give a series of exhibition flights on September 6th, 7th, 8th, and 9th at Weston-super-Mare.

### Ewen Crosses the Forth.

W. H. Ewen, the Scottish aviator, on Wednesday, August 30th, flew from the Marine Gardens, Portobello, near Edinburgh, across the Firth of Forth, and back again to the Gardens. At about 300 feet, he made for Kinghorn, leaving Inchkeith on his right. He appeared to find the wind troublesome at this altitude, and rose again till he was about 1,000 feet up. Past Inchkeith, Ewen found himself in an almost dead calm, and held on till about a mile from Kinghorn, where he turned up the Firth towards Leith.

Two miles from the Port he again turned and came back to the Marine Park. The crowd had greatly increased, and as the aviator appeared he was loudly cheered. He descended, but seeing he could not land in such a restricted area, he went over the heads of the crowd and landed in a field about a mile to the west. There he had the planes taken off and the machine wheeled back to the enclosure.

On his return to the Park, Ewen had a most enthusiastic reception. "See the Conquering Hero Comes" was played by the band of the 3rd Dragoon Guards, and Councillor Rawson, on behalf of the Executive, met him at the Members' Club and congratulated him on his success. A speech was called for, and in a few words he expressed his pleasure with the manner in which his flight had been conducted. He was glad that a Scot than had been able to do something. His mother and father witnessed his flight.

Ewen is a graduate of Edinburgh University, and is organist at Park Parish Church, Glasgow. He only took up aviation this year, but he made remarkable progress at Hendon. He flew at his first attempt, and gained his pilot's certificate at his third flight. This is a record for Hendon.

Writing to THE AEROPLANE in answer to a letter, Mr. Ewen says: "This, I believe, is really the longest distance about 28 miles.—Ed.] attempted over water with such a low h.p. (28-32 Anzani) since Bleriot crossed the Channel. The machine was delivered to me in a hurry, and had not been previously flown. I had no chance for trial flights, and only had 150 yards to rise in and clear a fence of 15 feet. I am pleased, however, with the way in which the Deperdussin flies and handles. I am being presented with a large silver cup by the Edinburgh Marine Gardens in honour of the event.

"I am soon taking the machine back to Lanark, where I expect to put at least two pupils through during the next week for R.Ae.C. certificates. I have two splendid machines in the school looking after things, that I may be thoroughly up-to-date, one of them, Mr. Warren, from the Hendon Aerodrome, being responsible for the splendid running of my engine on Wednesday."

In the morning, by way of practice, Ewen had done a mile cross-country flight. Shortly after six a.m. he started from the sports enclosure, after a run of about 150 feet, and steered seawards towards Leith. Circling round by Seafield, Ewen passed over the golf course at Craigintony and turned inland to Duddington and Joppa. His intention was to fly back to the Marine Park, but near the golf course at Portobello the wind became troublesome, and he was obliged to descend on Northfield Farm. At one point he rose to 700 feet, but his average altitude during the flight was about 350 feet.

It is to be hoped that after so fine a performance aviation will become popular in Scotland, and that the Lanark Aerodrome will find plenty of pupils.

### An Engine Record.

The stationary radial engine seems to be coming into its own. Besides the R.E.P.'s record of being the only engine to get through the European Circuit, and the Canton-Unne's world's record for height with passenger by de Montalent, the new six-cylinder radial Anzani finished last week with a certified record of 3,686 kilometres flown during the week on this make at seven aviation schools in France, during which just on thirty brevets were put to its credit, this including one pilot of 225 lbs. weight and a flight of 2 hrs. 20m. at 120 kms. per hour.

### An All-Steel Monoplane at Eastbourne.

It is certainly to be much regretted that Mr. J. E. A. Gwynne does not approve of flights being made from his ground at Wilmington, near Eastbourne. Unfortunately, such is the case, and Mr. Victor Yates, who has been busy experimenting with his all-steel monoplane. Mr. Yates is by no means a novice at aviation, for he has made several flights at Hendon and Brooklands. The machine is an exceptionally strong one, and is fitted with a 35-h.p. engine. The wings are 34 ft. span and 7 ft. 6 ins. chord, and the over-all length 25 ft. It is so made that repairs can be very quickly and easily made, and it may be mentioned that the machine can be taken to pieces in a remarkably short space of time.—(C. A. C. Winchester.)





De Montalent gliding into the Harrogate aerodrome.

#### Tabuteau as a Monoplaneist.

Maurice Tabuteau, with whom the Bristol Company parted company soon after the Circuit of Britain, has joined the Morane-Borel combination, and on August 22nd qualified for the French "superior brevet," originally intended for the Army only, but now being taken by several civilian aviators who wish to institute a class of aviators of proved and certified ability.

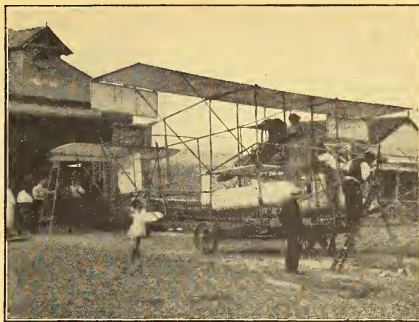
#### The Channel Crossed Again.

On August 27th Marc Pourpe, who had been giving exhibition flights at Boulogne, flew across the Channel, and landed on the glaciés of Dover Castle. On Monday morning he flew back again, and next day went on to Roubaix.

#### More Michelin Attempts.

On August 29th, Pascal, on a Deperdussin, flew 812 kms., but damaged his machine when landing at the end of a stage. On August 31st Duval, on his Caudron, also made an attempt, but was brought down at 800 kms. by engine trouble.

On September 1st Védérines had another try and covered 468 kms., coming down because he said his warping arrangement had gone wrong. He says he is going to try and fly the full 24 hours, midnight to midnight, by the full moon on the 11th.



The Piffard hydro-aeroplane at Shoreham.

#### Aeronautical Research.

Scholarships for aeronautical research are offered by the governors of the Imperial College of Science and Technology, South Kensington, consisting of exemption from fees and maintenance allowances. In suitable cases provision will be made for part of the work to be undertaken at the National Physical Laboratory, Teddington. Advanced courses of lectures in aeronautics are to be arranged shortly by the college. These should be very interesting, but the trouble about all such lectures is that they are generally employed in explaining mathematically things the ordinary rule-of-thumb man discovered a year earlier.

#### A Handley Page Move.

Mr. Handley Page has now removed his flying ground from Barking, and has acquired an excellent ground in Essex, half-an-hour by train from Liverpool Street, and five minutes' walk from Fairlop station. Mr. Page says that the ground is 1,000 yards long by 550 wide, and has a surface as good as a football field, so it certainly ought to provide an excellent place for learning. THE AEROPLANE hopes before long to be able to chronicle considerable flights by the Handley Page monoplane, which has already succeeded in doing several straight flights.

#### Another Bréguet Record.

The Bréguet has again distinguished itself by lifting three persons, of 75 kilogrammes each, with 95 kilogrammes of fuel, to a height of 900 metres in 20 minutes.

#### An Altercation at Voisins.

It is officially notified that Charles Voisin has left the Société des Aeroplans Voisin, of which Gabriel Voisin, his brother, is technical director and president of the board.

#### The Circuit of Belgium.

The long-drawn-out Circuit of Belgium has resulted in the victory of Tyck, on a Blériot, with Lanser and the Comte d'Hespe, both on Deperdussins, second and third. The also-rans were Contenten, on an Astra-Wright, and Parisot, on a Farman.

#### A French Wright which Flies.

Labouret, on the Astra-Wright biplane—Avro type—illustrated in this issue, flew for over an hour on August 31st, with a passenger, and using a Chenu engine. Running short of petrol, he did a compulsory *vol plané*, and landed perfectly, showing the soundness of the design. This is the most satisfactory machine the French Wright firm have built, and they evidently had to revert to an early British machine.

#### More Weight-Carrying.

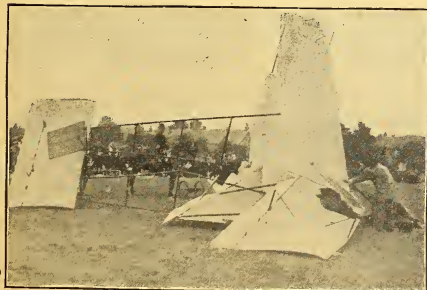
Sommer has been doing some more weight-carrying since the French Aero Club put a minimum weight limit on passengers for record purposes. On August 29th he succeeded in carrying six people (himself and five others) of an average weight of 75 kilos (about 160 lbs.) from Douzy to Mouzon—16 kms.

#### The Activity in the French Navy.

Captain Daveluy, of the French Navy, a certificated pilot, has been commissioned by the Government to find a suitable place near Toulon for a naval aerodrome.

#### An Acknowledgement.

For the photographs on this page THE AEROPLANE is indebted to Mr. W. O. Manning, the well-known designer for Mr. Howard Wright.



Mr. Reynolds' smash at Harrogate during the Circuit.

## The Flanders Monoplane.

This machine is, as far as I know, absolutely unique. It was designed in a few days—*really* designed, on sound theoretical lines—was built in three weeks, and flies excellently.

The wings are of timber, the spars being built up. They are beautifully built, and, though rather heavy, are immensely strong. There is a pronounced taper, and a slight "wash-out," both of camber and angle. There is also a fair dihedral angle. Both spars have king-posts 7 ft. from the body, and are stayed from the chassis and from a central mast. The camber, like the rest of the machine, was designed,—not simply chosen because it looked pretty.

In flight the planes lift somewhere about  $6\frac{1}{2}$  lbs. to the square foot at 60 m.p.h., at an angle of 1 in 5—which means that they are extremely efficient. To put it in mathematical terms,  $K=.008$ , whereas for an average plane  $K=.0066$ .

The main wing stays are of steel strip, which Mr. Flanders has had specially made for him. This, though it has a tensile strength of 80 tons, is too soft to get "fatigued" by vibration, but it does not stretch. The fabric is put on untreated, and afterwards varnished with the special fabric varnish produced by Martin-Handasyde.

The fuselage is approximately of a true streamline form, and is practically square in cross section. At the front end it is just large enough to take the crank-case of the 60-80 Green engine employed. It swells rapidly to a width and depth of 2 ft. 10 in., which is large enough to take the pilot and passenger very comfortably. The pilot's seat is just about the trailing edge of the wings, the passenger sitting in front of him. Aft of this the fuselage is fabric-covered, and tapers away to nothing at the rear end, where are an empennage and elevators, which amount to a circle of 8 ft. diameter, with one-quarter cut out to take the rudder.

The front end of the fuselage is very carefully covered in, mostly with removable aluminium sheets. There is a specially-shaped channel to encourage a free flow of fresh air to the carburettor, and the exhausts from the auxiliary ports are all carefully collected and led out at the bottom of the fuselage via a special sheet-iron chimney of large dimensions. There are two spiral tube radiators lying along the bows of the

fuselage, and a combined tank and radiator above and behind the engine.

Petrol is supplied by gravity from a small tank just in front of the mast, the main pressure-feed tank being inside the fuselage.

The control is more or less on the Deperdussin scheme: the warp-wheel is mounted on a cross-bar in front of the pilot, the wheel and bar swing to give elevation control. The rudder works from a foot-bar. All the controls are very sweet in working, but are, nevertheless, very powerful; the machine answers to them very quickly indeed—astonishingly quickly, considering that the machine is exceptionally stable.

The chassis is original: it combines a central skid with tracking wheels, and looks, as in fact it is, rather heavy. But it is undoubtedly immensely strong. In fact, the strength of the whole machine is phenomenal; no better proof of this could be found than the account of Mr. Petre's "discontinuation" on Friday last (see "Week's Work").

The power-plant consists of a 60-80 Green, with auxiliary ports and (at present) a Beney propeller, which gives, we are told, most excellent results. Dual ignition is fitted, which enables the pilot to start unaided simply by switching on from the battery. There is also an exhaust valve lifter, so that on a long glide the engine would keep running without being switched on. Some people may object that the use of a lifter sometimes leads to difficulty in restarting, owing to the fact that the cylinders get repeatedly filled with cold air, but with a proper mixture it only means that the motor may hang fire for a second or two.

In conclusion, the writer would like to express to Mr. Flanders his thanks for many interesting talks about this and other machines, and would offer his best wishes for success. It might be explained that this machine is really a sort of *hors d'œuvre*, having been designed by Mr. Flanders chiefly to pass away the time while waiting for various parts of the big scientifically stabilised machine which is to be his *chef d'œuvre* or *pièce de résistance*. Still, even so, the machine under review is very far in front of the majority of monoplanes which are now being produced. P.K.T.

### The German Navy and Aviation.

From Berlin comes news that the German Navy is preparing a big aviation scheme. Naval aerodromes will be established at Dantzig, Cuxhaven, Wilhelmshaven, and Emden, and it is said that a particularly big aero-naval establishment is to be organised in Heligoland—formerly a British possession in the North Sea, and within a few hours' flight of the East Coast of England. A number of naval officers are already in training at the Johannisthal school, near Berlin, and these are to become instructors at the new schools. Among these are Commander Hering, training on an Albatros; Commander Goltz, on another of the same make; Lieut. Hartmann, on a German Wright; and Lieut. Bertram, on an Illner-Eitrich. Meantime, our naval men at Sheppey are waiting to know whether they are ever to fly again.

### The French Manœuvres.

The following is the list of officers appointed to take part in the French manœuvres, and the machines they will use:—

#### SEVENTH ARMY CORPS.

Officer commanding: Captain Félix (Colonial Artillery).

First Section, Chief of Section: Captain Bellenger (Artillery).

Officer aviators: Lieutenants Ludman (Infantry); Gourlez (Infantry); Géraud (Infantry); Migaud (Cavalry) (Bréguet biplanes); Captain Bellenger (Artillery); Lieutenants de Rose (Cavalry); Chevreau (Artillery) (Blériot monoplanes).

Second Section, Chief of Section: Captain de Chaunac (Colonial Artillery).

Officer aviators: Captains de Chaunac (Colonial Artillery), Camine (Engineers), Lieutenant de Grailly (Cavalry) (R.E.P. monoplanes); Captain Casse (Engineers); Lieutenants Rémy (Engineers), Blard (Colonial Artillery) (H. Farman biplanes); Captain de Goy (Infantry); Lieutenants Ducreneau (Infantry), de Malherbe (Cavalry) (Blériot monoplanes).

#### SIXTH ARMY CORPS.

Chief of Section: Captain Etévé (Engineers).

Officer aviators: Captain Etévé (Engineers); Lieutenant Chautin (Infantry), Sapper Fourny (Reservist) (M. Farman biplanes); Lieutenants Maffert (Infantry), Camerman (Engineers); Sub-Lieutenant Ménard (Engineers) (H. Farman

biplanes); Lieutenant Ph. Féquant (Colonial Infantry), Ensign Delage (Navy), Lieutenant Maillois (Artillery) (Nieuport monoplanes); Lieutenant Trétarre (Infantry) (Deperdussin monoplane); Lieutenants Gouin (Cavalry), Lelièvre (Artillery), de Montjou (Infantry) (Blériot monoplanes).

Since this list was published it is reported that Captain Camine and Lieutenant de Grailly have been killed when flying to Vesoul, their point of concentration.

### The Newest Paulhan Machine.

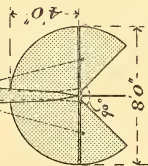
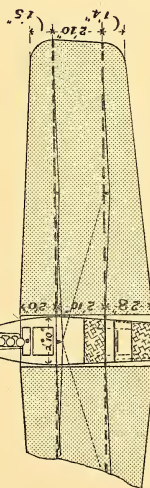
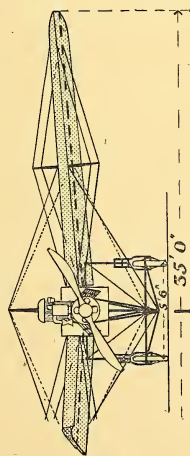
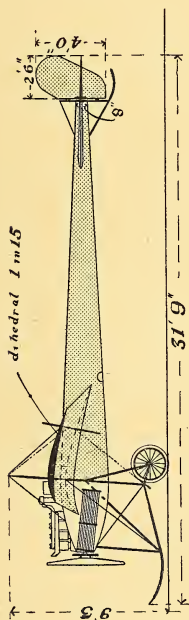
Paulhan, who has been working quietly all this summer, has now produced his new military machine, which possesses some good points. To facilitate transport, it is so designed that the tail and elevator detach quickly, the landing wheels swivel round at right angles, and the machine can be towed behind a car by one end of the main planes. All the fabric can be detached and folded up, so there is no danger of the machine being blown over, nor does it need a shed to cover it. Piano wire has been replaced throughout by stranded cable. At its first test it stood four times the load required by the military conditions. If it were not for the fact that he still places his engine behind, the machine would be quite promising. Still, one fancies that a neat, light monoplane, with a sensible chassis, quickly detachable wings and weather-proof fabric, could do just as much on land and a great deal more in the air.

### More Success for Sopwith.

Mr. T. O. M. Sopwith, flying his 50 h.p. tandem Blériot, won the "Boston Light" race on Saturday. Grahame-White was disqualified. Sopwith also won the quick starting prize, and was second in the altitude competition.

### A Victim of the Mob.

J. J. Frisbie, one of the earliest American pilots, was killed at Norton, Kansas, on Friday last. He had had a fall the previous day and did not want to fly, but was driven to do so by the jeers of the crowd. Sometimes it takes a good deal of moral courage to avoid becoming the victim of one's own physical bravery. Frisbie went up in bad weather, and was killed.



# Flanders Monoplane.

Surface of Main Planes	200 sq. ft.
" " Empennage	25 " "
" " Elevators	12.5 " "
" " Rudder	6 " "

Weight (without Pilot) 1000 lbs Speed, 60 mph.

Engine, Green, 60 hp, 1100 r.p.m.

Propeller: Boney, 7'10" diam., 6'0" pitch.

*W.E.*



## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

### More About Engines.

Sir,—You print a long letter from Mr. Ernest Warde-Fox, to a great deal of which exception can be taken.

Presumably everyone with sufficient knowledge admires the cleverness which is in the making of the success of the Gnome, but that is no reason why other engines should be grossly misrepresented. Mr. Warde-Fox says, "The Gnome engine remains to-day as it always has been, absolutely the only engine on which a pilot can unwaveringly rely." That statement is utterly wrong, and is a very extraordinary one to be made by a gentleman who styles himself "patriotic." There are plenty of records of complete and highly dangerous failures on the part of the Gnome. There are plenty of manufacturers and a great many aviators who, however much they may admire the Gnome and however much they may use the Gnome, have the greatest dislike for that type of engine. That that type of engine has very serious faults is well known.

The N.E.C. engine certainly, during the past twelve months, has not made many public appearances. Throughout that period, however, it has been used exclusively by Mr. Ogilvie, and this gentleman, as is well known, has done a great deal of flying. We believe Mr. Ogilvie would say that he could place at the very least as much reliance on the N.E.C. as could be placed on the very best Gnome. The plain fact of the matter is that the Gnome has set such a standard in power for weight as no four-stroke engine of the stationary cylinder type can hope to approach. If any approach by a four-stroke engine is made to such a standard, then it is cut so light that the risks of breakdown are too great. It is, we believe, equally certain that if an engine with stationary cylinders, and coming up to the same standard in the matter of power for weight and equally strong in its parts, can be produced, then that engine must be superior to the Gnome.

It has seemed to us from the commencement that the solution of the problem lies in the two-stroke engine, and since the Gnome firm a few months ago took out a patent for a two-stroke aeronautical engine, it seems fair to assume that they are in agreement with us in this matter.

The New Engine Company has spent a large amount of money and a very great deal of time in the production of a satisfactory two-stroke engine. We have achieved success, we have produced an engine which is at the very least as reliable as the Gnome, which comes up to the standard of weight for power set by the Gnome, and which has all the advantages which a stationary cylinder engine must have against a rotating cylinder engine. Such an engine, being of an entirely new type, cannot be expected to jump into immediate popular success, particularly in this country, where we are apt to be perhaps excessively conservative; but we have made good progress. We have devoted ourselves during the past twelve months almost entirely to work on this engine; we have proved all our points in our own test shop, and the work done by Mr. Alec Ogilvie has given public proof that the engine is as we claim it to be.

We trust Mr. Warde-Fox will be interested in these particulars as he is evidently unaware of the work done by the N.E.C. engine, and we hope he will congratulate us upon having at such an early date foreseen the necessity of the two-stroke engine and having had the courage to tackle a very difficult and very costly piece of work.

NEW ENGINE (MOTOR) COMPANY, LTD.

J. C. Mort (Director).

### The Matter of Compasses.

Sir,—We are extremely gratified by Mr. Clift's edifying remarks re our Birding Belt; we are also one with Mr. Clift in acknowledging the importance of a compass working accurately. It is disconcerting, to put it mildly, to set your course for Timbuctoo and find yourself on the Himalayas. For one thing, a Timbuctoo outfit is not the one that is most suitable for snow-clad peaks, and present-day machines are not constructed to carry more than one suit case.

As a matter of fact, we are already getting out designs for a special foodproof belt with non-magnetic fittings, which shall be fixed on purely by kindness without any hammering

or other similar methods peculiar to peaceful picketing. Also, we may add, that to further the cause and in the interests of science generally we have engaged the services of an eminent physicist to discover a non-magnetic iron tonic. When his researches have been crowned with success we will forward Mr. Clift a sample bottle of this, which we shall be pleased to call the "Clift Cordial for Callow Circuit Competitors," and will also be happy to supply him with large quantities of the same at a specially reduced rate to be sold in conjunction with his compass.

On reading the latter part of Mr. Clift's letter we think that if he considers the matter carefully he will see the advantage of having magnetic fittings, since this will allow of the thrilling experience of adjusting his compass course in mid-air while flying over the centre of London. An experience which should surely be as exhilarating as that of adjusting one's engine while engaged in a circuit of the Needles, and would have the advantage of permitting the aviator to live to tell the tale to posterity.

THE UNIVERSAL AVIATION COMPANY, LTD.

### A Matter of Design.

Sir,—With reference to the two replies to my previous letter in your esteemed paper, I may say that I wrote quite seriously in hopes of setting others to make some sensible suggestions; unfortunately, however, only destructive criticism has been forthcoming. "Grosse-tête's" extraordinary and uncalled-for attack I shall ignore.

With regard to Mr. Warde-Fox's last paragraph re control of speed with horizontal rudder, I maintain that this gives too slight a variation to be useful. Mr. Warde-Fox's earlier remarks would be best answered by reference to those parts of his own letter "Those Engines" which have not been dealt with editorially.

Did I wish, sir, to "get a bit of my own back," I might suggest that no machine yet flying has its thrust-line midway between the planes; that *real* aeroplanes are fitted with under-carriages and other things which cause the centre of drift to be anywhere *below* midway between the planes, and that this being so a machine built in the "correct" and only way" must inevitably stand on its head unless fitted with a heavily negatively-loaded tail.

I might further be moved to suggest that A. V. Roe and Nieuport at least have shown that a powerful engine is not essential.

It would, however, be discourteous of me to make such suggestions to a gentleman with whose fighting weight I am unacquainted, and I, therefore, prefer to say nothing, and let your intelligent readers draw their own conclusions.

Still remaining, sir (like too many "Circuit" competitors),  
VENTRE-A-TERRÉ.

### Starting and Alighting Competitions.

Sir,—I was much interested in your suggestion of giving prizes for starting and alighting at aerodromes. Alighting on a target is interesting to watch, but a starting competition (as oratory here) is not, as the spectators cannot really see what is happening.

Would it not be possible to arrange something akin to the "high jump" of an athletic meeting—the machines being made to clear an obstacle, the distance of which from the starting-point would be gradually reduced till only one competitor remained in?

The difficulty would be to devise an obstacle which would do no harm in case of failure to clear; but this ought not to be insuperable. Perhaps something could be arranged after the fashion of the horse-capped hurdles used in horse-jumping. It would not matter how low it was—a miniature hedge or paper screen a foot high would suffice—so long as the public could see whether it was cleared or not; and to avoid mere jumps the competitor might be obliged to clear a line (say) 50 yards beyond the obstacle.

Farnham.

H. B.

### Real Gliding.

Sir,—While reading Mr. Wilbur Wright's account of his experiments with gliders, I saw that the great pioneer was of the opinion that soaring by man without motor power was within the bounds of possibility, when he has learned to take advantage of the currents in the air, utilising them to gain altitude, after the manner of birds.

But a bird very often has to flap vigorously to ascend at all, and cannot always find an uprising air current, experienced aviator as he is, so that when he fails and has to use motive power, it is unfair to expect man to do otherwise.

# £650

**READY TO FLY.**

## The Flanders Monoplane

(TWO OR THREE SEATS).

60-80 Green Engine ("Circuit of Britain" type).  
50-60 miles an hour [L. Howard Flanders, Brooklands, Weybridge].

## CLIFT AERO MAPS.

Used in the "CIRCUIT OF BRITAIN" and all cross-country flights. Clift Maps were used by Vidart, Kimmerring, Valentine and others in the European Circuit, and by the majority of flyers in British Circuit.

## Clift Aero Compasses.

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators. Necessities for the "CIRCUIT of ANYWHERE."

For terms, write—ERIC CLIFT, c/o "The Aeroplane," 166, Piccadilly, W.

# Blackburn Monoplanes

TUITION.

EXHIBITION FLIGHTS ARRANGED.

THE

## Blackburn Aeroplane Co., Balm Rd., Leeds.

# DAVISON

REMEMBER THIS NAME

When requiring Aeroplane

TANKS (in brass, copper, oxy-acetylene welded steel, or other metals,

RADIATORS

REPAIRS

OXY-ACETYLENE WELDING



Best known manufacturer of these specialties in the motor trade.

Quotations free for oxy-acetylene  
:: :: repairs or other work :: ::

A. C. DAVISON,  
163, Arlington Road, Camden Town, London, N.W.

# ‘AVRO’



ACCESSORIES for

## QUALITY

A. V. Roe & Co. THE AVIATORS' STOREHOUSE,

BROWNSFIELD MILLS, MANCHESTER.

Telephone: 698 Central.

Telegrams: "TRIPLANE."

# AVIATION POSTERS

STRIKING IN DESIGN

and

CORRECT IN DETAIL

THE AEROPLANE, 166, Piccadilly, W.

Telegrams: "Aileron, London."

Phone: 5407 Mayfair.



Thinking in this manner, I have wondered why no aviator has experimented with a motor-plane with a view to finding whether it is not possible for the motor to act in place of the wing-flapping of a bird when the latter is seeking soaring conditions.

I mean that the aeroplane could soar without power in one current, then dart with screws going to another position, perhaps more favourable; in fact, copying the birds exactly.

In the event of motor failure, a glide to earth would surely not be more perilous than if it occurred in ordinary flying. Of course, I am presuming this has never been done before, for I have never heard of it.

ALEX. GRINDROD PUGH.

Liverpool.

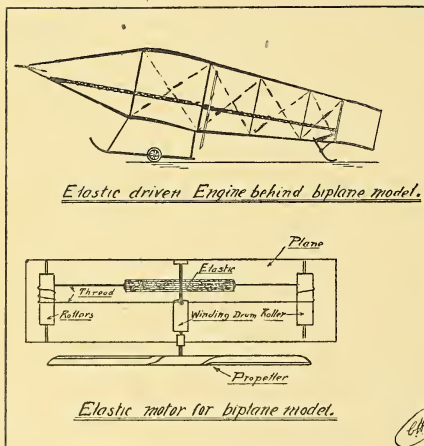
[Mr. Pugh's idea may have occurred to others. The hopelessness of the present aeroplane is the reason why nothing has yet been done, but we are improving gradually, for already we know enough to avail ourselves of upward currents to assist our lift.—ED., THE AEROPLANE.]

### More About Freak Models.

Sir,—In the issue of THE AEROPLANE of August 24th I was greatly interested in Mr. Grimmer's letter under the heading of "Freak Models." I do not think that the "freak models," as Mr. Grimmer calls them, are altogether useless.

He says: "The aero model, if constructed on proper lines . . . can be used to demonstrate stability, efficiency, and new propeller types." Why cannot "freak models" be used to test new propeller types? To me it seems as easy to test propellers on a "freak" as on a model constructed on the lines of their "big brothers," and less trouble to build.

If a model aeroplane (not petrol driven) is constructed with the intention of building a man-carrying machine to scale it is pretty well useless, because in a full-sized aeroplane the motor is in one place and there is also the pilot (and the passengers, if any), while in a model the motor—i.e., elastic—is spread for a good distance in front of or behind the propeller, therefore altering the centre of gravity. But this might be remedied by putting the elastic on both sides of the propeller, thus:—



Or else (in a biplane) the propeller-shaft could be extended to another upright; then two pieces of thick elastic could be fixed to something under the propeller-shaft and two pieces of thread fastened to the ends of the elastic and put over two rollers, one at each end of the plane, and brought back to the propeller-shaft, to which they are fixed. When the propeller is wound up the thread will wind round the shaft and stretch the elastic.

When the propeller is released the elastic will unwind the thread, and thus turn the propeller.

Underneath Mr. Grimmer's letter is his photograph. I should like to know whether he would call the model he has

in his hand a "freak"? One does not often see a full-sized aeroplane with its two propellers extending nearly the span of the plane.

I certainly agree with Mr. Grimmer's new method of rating; I think it a good plan.

I wish your paper every success, and would be pleased if anyone would have the kindness to correct any errors I have made. "Roy."

Fleet, Hants.

### Bad Model Design.

Sir,—Would you be good enough to give me a little advice on the construction of a model aeroplane? Have made one something like a Blériot monoplane, total weight 8½ ozs., 24 inches long, with 11-inch propeller; used ¼ square black elastic, eight strands (15 yards altogether), but can only get wrong, also the best place to get good elastic for the purpose? less than 100 turns out of it. Can you suggest what is? Have read your edition of August 31st, but cannot quite understand the model of the "Mann" monoplane. Are there any stays under the elastic, as I cannot see how the ends, where the propellers are, can bear the strain? It is stated there that about 1,000 turns can be obtained from such a model. Why cannot I get something like that number out of mine?

Noting Bill.

[Mr. Barton would do well to give up any idea of making a genuine model of a Blériot fly any distance, for the good reason that in the full-sized machine all the weight of the motor is carried right in the nose of the machine, whereas in a model the weight is distributed the whole length of the machine, and consequently it cannot be made to balance longitudinally unless the elastic be extended in front of the planes for practically as far as the fuselage extends behind. If he did this he would probably find that even then he would have considerable trouble through the machine landing on top of the propeller. If Mr. Barton would make a model of the popular loaded-elevator type, would make it about 36 ins. long instead of 24 ins., would cut the weight down to 4 ozs. instead of 8½ ozs., and would use eight strands of 1-16th elastic instead of ¼th on each of the two propellers, and then would experiment till he had made propellers suitable for the particular speed of that particular machine, he would probably get considerably better results.]

As regards the "Mann" monoplane, the trussing of the rear triangle takes the strain of the elastic. There are no stays direct from end to end of the elastic. Makers who claim to sell good elastic are invited to send samples to THE AEROPLANE for testing purposes.—ED., THE AEROPLANE.]

### Glider Problems.

Sir,—At a recent meeting on the Birmingham Aero Club's flying ground at Billesley Farm, King's Heath, a biplane glider of 37 feet span, with pilot aboard, was towed by six men against a wind of about 30 miles per hour, and when they had attained a speed of six or seven miles an hour the glider rose easily to a height of about 25 feet. Now it is obvious that a great deal of the energy of the towers was taken up in moving themselves over the ground, and only a small amount left for raising this huge glider and pilot and maintaining them in the air at an air speed of 37 miles an hour. In the face of this simple experiment, does it not seem that a large amount of the power on present-day aeroplanes must be running to waste? What is the fault? Is it the propeller? The aero clubs in the country should attempt to solve these problems; much can be done by co-operation in research work.

B. W. BEEBY.

[Solutions of this problem are invited.—ED. THE AEROPLANE.]

### Concerning the Compass-maker.

Mr. Eric Clift, writing on business matters, remarks that, judging from the class of people who have put ideas before him in connection with aeronautics lately, THE AEROPLANE must be getting pretty widely known, as these people have had nothing to do with aviation hitherto, being barristers, doctors, captains of ships, etc. Mr. Clift points out that, not being a *litterateur*, he did not intend his letter last week for publication, it being merely meant to give a little information. Still, his method of expressing himself is too good to be kept selfishly in an office, so no apology is needed for giving it to the readers of THE AEROPLANE, especially as it has elicited so humorous a reply. By the way, Mr. Clift was asked to join in the discussion on Aeronautical Maps before Section E of the British Association at Portsmouth on Tuesday last, and certainly no one is better qualified to do this subject.



**Another Resurrection.**

It is interesting to note that the old racing cyclist, Gabriel Poulain, who was killed and burnt at Copenhagen, by the daily Press, is making excellent progress, and expects to be quite well in a week or two.

**The French Grand Prix.**

The Automobile Club of France has put up a £4,000 prize for aviation, and the rules are now published. The competition is to take place at an early date, and will take the form of a race over a star-shaped course from Paris to Roubaix and back, landing at Amiens on the way, Paris to Dieppe and back, and Paris to Bourges and back; £1,000 of extra prizes are put up by the towns of Roubaix, Dieppe, and Amiens. Instead of all the prize money going to one man, it will be divided thus:—first, 5,000 fr.; second, 15,000 fr.; third, 10,000 fr.; fourth, 8,000 fr.; fifth, 6,000 fr.; sixth, 5,000 fr.; seventh, 4,000 fr.; eighth, 3,000 fr.; ninth, 2,500 fr. and tenth, 1,500 fr. When will the Royal Automobile Club put up a prize for a race from London to Birmingham, Bristol, Brighton and back on the same lines?

**Useful Model Parts.**

To those interested in model-making, and more especially models for inventors and for the Patent Office, a visit to the workshop of Messrs. J. Bonn and Co., of Oxford Street, should prove most interesting. This firm carry a large stock of all parts for the building of models, including propellers of all sizes up to 2-ft. diameter, rubber motors, and also parts for building same. The propellers seem to be a particularly nice job, being a good shape and highly finished. All these parts are made on the premises, for which purpose Messrs. Bonn and Co. have a workshop equipped with up-to-date machinery for both metal and wood working.

**New Engine Fittings.**

Two new and very interesting fittings for Gnome motors are being placed on the market by Messrs. Whiteman and Moss, the well-known makers of aeroplane fittings. The first is a petrol valve actuated by a ratchet lever working over a quadrant. This has the great advantage over the old wheel valve that it can be seen at a glance whether the valve is open or shut, and the lever can always be re-set in the notch at which the engine is found to give the best results. The second fitting is an oil tap for fitting in the tank, which should be useful to those constructors who buy the fittings and make up the tanks themselves. Messrs. Whiteman and Moss always carry a large stock of wire, steel ribbon, strainers, eye-bolts, etc. These latter are particularly worthy of note, on account of the special shape of the eye giving great additional strength.

**More Reading Matter.**

Those people who have recently begun to take an interest in aviation and who want, as they ought to want, a thorough knowledge of the work of the pioneers, both in dirigibles and in aeroplanes, cannot do better than acquire "The Conquest of the Air," by Alphonse Berget. (William Heinemann.) A second edition, brought up to the end of March this year, is now on the market, and it affords excellent reading. The work is chiefly historical, but M. Berget has included certain useful information as to the elements of flying which can be easily understood by non-technical readers, and will even help those of more experience, in that they provide handy ways of explaining some of the phenomena of flying to the uninitiated. There are, of course, inaccuracies in the book, such as the inclusion of the very-much-alive Dr. Walden among the killed; and certain of M. Berget's statements were not exactly true at the date of his revision, as, for instance, that the Sommer was the lightest and fastest biplane, when both the Roe and the Bréguet could fly rings round it at any time; and he refers to the fact that the instability of the Wright machine places all the onus of maintaining balance on the aviator, but he neglects to mention that the modern Wright machine is one of the most stable in the world. Nevertheless, the book is one well worth having, if only for the sake of the early history of aviation, which the writer has never seen set forth in a more attractive way.

**Aeroplane Photographs.**

Readers of THE AEROPLANE who collect aviation photographs can now obtain copies of any pictures which appear in the paper. The smaller ones can be had in postcard size at sixpence each, and most of the larger ones can be had in half-plate size at a shilling.

**A New Club.**

The Barrow Model Aero Club was officially formed last week. The secretary is E. Gayden, Esq., 22, School Street, Barrow-in-Furness.

**Blackheath Aero Club.**

Members of newly-formed model club met on Blackheath during week-end, and showed a large and appreciative audience very good flying, flights averaging 400 yards. High flying has also been a feature of the week. Next meeting will be held Sept. 9th, 4 p.m., members meeting near church on Heath. Enthusiastic model-makers who care to attend, or forward name and address, will be welcomed by A. Rippon (Hon. Sec.), 5, Limesford Road, Nunhead, S.E.

**The Scottish Aeronautical Society M.Ae.C.**

General meeting of above club will be held in the Engineers' Institute, Elmbank Crescent, on Thursday, September 7th, at 8 p.m. Committee earnestly request full attendance of members, as interesting and important proposals are to be laid before them. Members are now being enrolled for ensuing year, and all communications should be addressed to Secretary, William Foster, Rochelle, Limeside Avenue, Rutherglen.

**Liverpool M.Ae.C.**

All work has been suspended owing to labour troubles. There will be competitions on Saturday, September 9th, which will be the last for Mr. Harrison's prize, which was open for September. Club meets first and third Friday in each month; committee meeting second and fourth Friday. Will members please note, and attend in full numbers. Flying competitions on fine days commence at 3 p.m., but when windy will be postponed until five o'clock. Donations to club library will be gratefully acknowledged.—Alex. Grindrod Pugh, hon. sec., 39, Brooke Road, Bootle.

**The Waterloo Model Aero Club.**

"It was recently proposed to form a Model Aero Club in Waterloo, Liverpool, and, before we could feel justified in inviting members to join it was decided to hold a meeting on the Waterloo shore. Ten models were entered, and all flew well, the best flight being made by Mr. A. P. Hitchens' monoplane, which flew 1,140 ft. at a height of 50 ft. As the club wants more members, we earnestly invite all in the district who are interested in model flying machines to communicate with our hon. sec., N. T. Harvey, 35, Oxford Road, Waterloo."

**The Aero Models Association.**

North Metropolitan Branch will hold two open competitions on Sept. 30th (3 p.m.) at Bishop's Avenue, East Finchley, N. "Rising from ground" competition combined with distance will be held, also competition in which models will be flown to pole 200 yards from starting point; winning model to be one to land nearest pole. The Earl of Ronaldshay has presented this branch with £115, half of which will be first prize in each competition. Other prizes will be offered should entries warrant it. Particulars and entry forms, Secretary, Aero-Models Association, Caxton House, Westminster, S.W., or Malcolm B. Ross, Hon. Sec., Northern Branch, A.M.A., 15, Highgate Avenue, Highgate, N. September 29th is last day for entries.

**The Visitors' List.**

Mr. Abbott came in to have a talk over flying in general, and said that he had made arrangements with the Blondeau-Hewlett school to go on flying one of their machines whenever he could get away from his motor business. He has the meetings of an uncommonly good flyer, and no doubt, when the business side of aviation expands still further, considerably more will be heard of him.

Mr. J. McCallum More, accompanied by an aviator's cap and goggles, drifted in casually on his way to Brooklands, where he has joined the Avro school so as to learn to drive a machine with engine in front. Two years ago or more he did quite a fair amount of flying in France on one of the old Voisins, and spent some months at Mourmelon in the early days. Flying seems rather to run in his family, as his sister, Miss Nancy More, of the Gaiety, recently made a flight of an hour and a quarter at Buc with Maurice Farman, and has already paid a visit to Brooklands since her return.

Messrs. Fleming and Pizey, the Bristol pilots, called on THE AEROPLANE previous to taking over the control of the Bristol school at Brooklands. As readers of THE AEROPLANE know, both of them are magnificent flyers, with plenty of cross-country experience, and they should be a great attraction to people in London who want to see really first-class flying when they go to Brooklands, where recently there has been,

as a rule, only one pilot at the Bristol school. Mr. Pixton, who has hitherto been practically a fixture at Brooklands, has left to go as instructor to the Salisbury Plain school, and he will be very much missed by his many friends at Brooklands, where, in spite of his splendid flying, he never lost his peculiarly modest manner, and, because of it, won himself hosts of friends. However, Pizey and Fleming are both of the very best, both personally and as aviators, and will quickly become as much admired as Pixton. They expect to have several new machines down at Brooklands before long, and they should help to make things lively.

Capt. H. F. Woods, of Vickers, Ltd., imparted some useful knowledge concerning the intentions of the firm in the near future. It is already pretty generally known that the firm has five sheds at Brooklands, and "Vickers II.," somewhat altered from "Vickers I.," should be there by the time these notes appear. Mr. E. V. B. Fisher, as already noted, will be chief pilot, and a school under his direction will be got to work at once. Defending pilots of monoplanes should note this, for the Vickers is a particularly sound and well-built machine, being constructed as it is of steel throughout and having one of the finest engines in the world, an engine which has on several occasions beaten the rotary engines purely on their merits. Fisher has already shown great ability as an instructor, and so pupils should soon be joining the school in quantities.

Mr. A. V. Roe came in to discuss further the new machines which were referred to in last week's issue. The new Roe biplane of the familiar engine-in-front type is now at Brooklands, and should be flying during this week. It is quite a nicely constructed machine, and should make a name for itself as quickly as the first of its type did.

Mr. Duigan, who has been interviewing people on the subject of engines for his Australian ventures, came in on his return from Derby with glowing reports of the doings of the latest type Albatross engines. Having seen them in the course of construction at the works, he is able to form a really good opinion on the work which is now being put into them, and he himself is having one out to Australia, where he hopes to dispose of a good many more.

Mr. Narraway, who looks after the interests of Chauvière propellers in this country, was much interested in the smash of Mr. Astley's "Big Bat" on Saturday, and seemed to be of the opinion that the chief cause was an experiment which was being tried with an imitation of the Chauvière propeller. According to his idea nothing can touch the genuine article.

#### More Opinions.

Lieut. H. E. Watkins, P. and O. S.S. "China," Port Said: "Will you please send me THE AEROPLANE? I must have it. Address c/o Dr. Mawson, Adelaide University."

W. H. Ewen (Certificated Aviator), Lanark: "Your paper, I may say, is thoroughly appreciated by Scottish readers."

Malcolm B. Ross (Hon. Secretary, Northern Branch, Aero Models Association): "THE AEROPLANE is great, and is far and away the wittiest and most accurately informed journal we have dealing with this sport."

Mr. H. C. Wright, Evesham: "Allow me to congratulate you on the success which your splendid paper is apparently attaining. I am positive it is the best paper devoted to aeronautics which has yet appeared. Continued on its present lines—breezy and outspoken—its future is positively assured."

W.M.H., Whitkirk, Leeds: "May I say how thankful I am to your paper for expanding my knowledge in aviation? I consider it to be quite the most interesting of all aviation papers."

E. W. Nix James, Horfield, Bristol: "I cannot close without congratulating you on the production of THE AEROPLANE. It is just what is wanted to stir up the whole British nation."

Oscar S. Penn, Hull: "Many congratulations on your new paper. My engines run a lot better since it came out."

A. W. Furbank: "Accept my congratulations on your admirable weekly."

Walter W. Wynne: "Allow me to wish all success to your paper."

Brian M. Dodds: "Wishing you every success with your most interesting paper."

W. S. Nathan, Stevenston, Ayrshire: "Best wishes for your excellent paper."

E. H. Brabant: "I have only been a reader of your paper for the last three weeks, and I find it very useful."

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERLON, London.

Telephone: Mayfair 6407

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
3 months, post free	1	d.	8	3 months, post free	2	d.	9
6	"	"	3	6	"	"	5
12	"	"	6	12	"	"	11

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsgagents, each issue can be obtained direct by forwarding remittance as above.

## CAUTION TO THE PUBLIC.

IT has come to our knowledge that a person has been going about Bristol stating that he is or has been in our employ at £100 a day. He has recently taken a furnished office in Bristol and calls himself "The Bristol Aviation Company," thus illegally assuming the name of one of our subsidiary companies, "The Bristol Aviation Company, Limited." As a result, manufacturers at a distance who have been solicited to tender for supplying goods have been deceived into thinking that the application proceeded from us.

This individual was never in our employ. We know nothing whatever of him beyond an inquiry on his part as to the price of aeroplanes.

We therefore feel it our duty to issue this warning to the public.

The British & Colonial Aeroplane Co., Ltd.,

G. STANLEY WHITE,

Bristol,

Managing Director.

August 29th, 1911.



## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted ONLY—18 words **1/-**. 1d. per word after.

### MACHINES.

**F**OR SALE, new BLERIOT monoplane, exactly the same as Beaumonts. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**B**LERIOT cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

**M**ACHINES.—“Avro” Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**F**OR SALE without reserve—45 H.P. Monoplane, new and tested, will sacrifice fair offer, cost £900. Also 40-50 H.P. Jap 8-cylinder engine and propeller, etc. Apply Box 333, THE AEROPLANE.

**M**ILITARY type Farman, Gnôme Engine, cases and spares for sale, price £650. Instalments accepted from responsible purchaser. Apply Box 334, THE AEROPLANE

### ENGINES.

**F**OR SALE. Genuine Antoinette engine, complete, in thorough working order. Also Humber 3-cylinder aero engine. Manager, Portholm, Huntingdon.

**A**EROPLANE ENGINES. Several good second-hand for sale with 2, 3, 4, and 6 cylinders; Also one 8-cylinder Antoinette 4 inch bore—bargains. Patmore's Motors Ltd., 45, Broadway, Walham Green, W. Telephone: 277 Western.

**50-60** H.P. GREEN. Dual Ignition. “Spiral Tube” radiators and tanks. £150. Box 335.—THE AEROPLANE.

### PROPELLERS.

**P**ROPELLERS.—“Avro” Propellers of proven efficiency. 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co., Brownsfield Mills, Manchester.

### CHAUVIÈRE'S FAMOUS “INTEGRAL” PROPELLERS

hold all Records, used by all leading Aviators. The Best, Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### EMPLOYMENT.

**W**ANTED, Certificated Pilot Aviator as instructor Blériot and Farman. Salary and 50% all earnings. 3 months' certain engagement. State lowest terms and full particulars. SCHOOL, c/o AEROPLANE.

**C**ERTIFICATED PILOT-AVIATOR—experience of six types—desires any opportunity for amateur flying, experimental or standard machines.—“AMPHIBIAN,” c/o THE AEROPLANE.

**F**OREMAN ENGINEER, 10 years' motor and 3 years' aeroplane construction. Good practical experience with technical training. Home or abroad. Good references. Age 31.—WONHAM, 61, Coombe Road, Croydon.

### TUITION.

**T**UITION, with or without limited liability, Blériot XI.; personal instruction.—CHANTER, Aerodrome, Hendon.

**T**UITION.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. More certificates have been secured on the AVRO than on any other “All-British” Aeroplane.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**L**ANARK AERODROME, N.B. Tuition for R.Ae.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

### INVESTMENT.

**A**ERONAUTICAL Business for Sale, established three years, including two full-sized biplanes that have flown (British designed, patented) and patents for Control Lever, Automatic Stability, Brake, Disappearing Wheels. Well equipped works and flying grounds. Price £3,000 part cash.—MALLOWS & Co., Adelphi House, Strand, London, W.C.

**G**OOD Business in Models and Aeroplane Parts for Sale, in Midland town. Excellent connection. Owner moving to London. Replies to Box 326. THE AEROPLANE.

### MISCELLANEOUS.

**“MANN” MONOPLANE.**—The model that is guaranteed to have flown the quarter-mile. Has your doctor ordered you to take plenty of exercise? If so, buy a “Mann” Monoplane and you will run a dozen miles in one evening without knowing it. Mr. C. B. Ridley writes as follows:—“The ‘Mann’ Monoplane is the most remarkable model of its kind.” A customer says: “I have often purchased alleged flying models, but until I tried a ‘Mann’ Monoplane I never succeeded in getting even one decent flight. At the very first trial she covered nearly six hundred yards.” 15/- brings this marvellous machine, post free and well packed. Parts for constructing same only 5/-; “Mann” geared winders, 5/-; “Mann” propellers, 3/6 per pair. Sole Manufacturers:—WILLIS BROS., 14, Wellington Square, Hastings.

**H**ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**S**ECOND-HAND BAND-SAW, splendid condition, Tilting Table, Fences, etc., for hand or power. £5.—MALLOWS & Co., Adelphi House, Strand, W.C.

**E**TRANGERS, qui aimez la langue française et l'aviation abonnez-vous à

### LA FEUILLE SPORTIVE

2 fr. par an, France; 3 fr. par an, Etranger. Directeur: M. Gache, Professeur du Lycée Carnot, 5, Rue Salneuve, Paris.

**P**HOTOGRAPHS:—Original photographs of most of the illustrations in THE AEROPLANE can be supplied at short notice, half-plate size 1s., postcard size 6d., from THE AEROPLANE, 166, Piccadilly, W.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, SEPTEMBER 7th, 1911

No. 14.

## "BRISTOL" AEROPLANES ARE RELIABLE .. and STRONG.

Write for particulars of

THE "BRISTOL" MONOPLANE

TYPE "P"; and

THE "BRISTOL" BIPLANE

TYPE "T."

LEARN  
TO  
FLY

... at the ...

"BRISTOL"  
FLYING  
SCHOOLS

AT

SALISBURY PLAIN and BROOKLANDS.

They have the Finest Equipment and most  
Expert Tuition Staff in the Country

AND THUS

ENSURE RAPID PROFICIENCY.

SPECIAL TERMS TO NAVY AND ARMY OFFICERS.

Full particulars will gladly be furnished by—

The British & Colonial Aeroplane Co., Ltd.,  
FILTON, near BRISTOL.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, SEPTEMBER 14th, 1911.

No. 15

## What It Really Means.



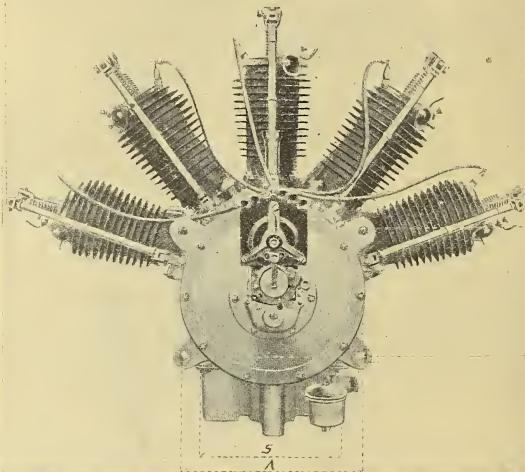
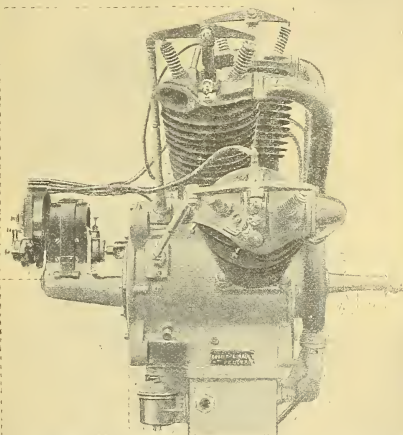
The big flights of 1911, up to date, are shown above, as if the aviators had started from London and had flown in a straight line in any given direction, leaving wind out of consideration. The accompanying table gives further particulars:—

Hélen ... 780 miles (1,248 kms.) ... 14 hrs. 7 m. ... (International Michelin) Sept. 9th ... Nieuport Monoplane.
Hélen ... 709 " (1,126 " ) ... 13 " 47 " 19 s. ... " " " Aug. 26th ... Nieuport "
Pascal ... 507½ " (812 " ) ... 12 " (about) ... " " " Aug. 29th ... Deperdussin "
Duval ... 500 " (800 " ) ... 12 " (about) ... " " " Aug. 29th ... Caudron Biplane.
Fourny ... 440 " (720 " ) ... 11 " ... (Non-stop Record) Sept. 1st ... M. Farman Biplane.
Gerrard ... 129 " ... 4 " 15 m. ... (Martiner Singer) Aug. 16th ... Short Biplane.
Cody ... 125 " ... 3 " 7 " ... (British Michelin) Sept. 11th ... Cody Biplane.

SMITHSONIAN  
INSTITUTION OCT 27 1968



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE		PAGE
THE AEROPLANE INDUSTRY...	339	THE WEEK'S WORK...	348
THE AERIAL FARCE ...	342	THE RIGHT-HAND TURN ...	351
AIR CURRENTS ...	344	GENERAL NOTES ...	352
SIDE-SLIPS AND SPIRAL DIVES ...	346	CORRESPONDENCE ...	355
WORLD'S RECORDS ...	347	THE VISITORS' LIST...	358

## Editorial Opinions.

## The Industry.

In the *Morning Post* of September 5th there appeared some remarks by Mr. Massac Buist, which seem to call for further comment. It would be hard to find any journalist connected with the lay Press who has done more to popularise aviation among the right class of people than has Mr. Buist, and, therefore, one may at once acquit him of any intention of wishing to belittle the possibilities of aviation; but it is quite possible that some of his remarks may be misconstrued when taken apart from the whole of his article.

The *Evening News* of the same day, quoting Mr. Buist, draws particular attention to a paragraph in which he says: "Future performances that shall achieve distinction will put increasing strains on the physical endurance of the pilots as year succeeds year. One particularly introduces this point because the class of young man sometimes described as the 'weedy youth' is very considerably in evidence among the recruits to the ranks of airmen, men whose physique will never develop into a sturdy mould." Here the writer is inclined to disagree with Mr. Buist, for in a properly designed aeroplane no great physical strength is needed; what is really wanted is "hands."

In support of his argument Mr. Buist cites the class of man who became successful in motor racing. It is true that the crack motor driver was, as a rule, a very strong man, but the muscular strain necessary for going through a big motor car race was quite a different thing from driving an aeroplane. Driving through a big car race meant not only the use of terrific physical strength in wrenching a car round corners, jamming on foot and hand brakes at the right moment, and so forth, but it also meant changing tyres, which really does call for pure muscle as well as skill, and the physical strain, owing to the jolting on the road, was also very considerable. If some of the old hands will go back in their memory they will remember men who never did well in big car races simply because their strength gave out, and yet taken purely on their skill as drivers they were often superior to the men who actually got through.

Aeroplane racing is altogether another matter, for in this case the purely muscular effort is absent, and what is called for is simply endurance and fineness of touch. Men of the type generally described as "weedy" often possess tremendous stamina, although they do not strike one as being muscular. As a matter of fact, anyone who has had experience

of cycle racing will remember that most of the thin "weedy" men were very much better on long distance work than the thick, sturdy ones.

Referring to the financial side of aviation Mr. Buist says:—"There is not enough, and there is never going to be enough, in this aeroplaning business for it to be worth while to recommend other than material likely to stand a pretty good chance of proving conspicuously successful to take up the calling. Those who take to the new movement merely because it is a new movement, and not because they have special qualifications, will lead lives that are likely to prove more disappointing than if they took up any one or other of the more established or conventional callings, for whichever way you look on this aeroplaning business it is a very strenuous affair. Apart from the physical risk, financially the movement will pass through the most violent and disheartening vicissitudes, which are, incidentally, anything but pleasant experiences for wage-earners."

In a way Mr. Buist's remarks are perfectly true. They are equally true of the first men who ventured into the business of bread-making when popular taste preferred to chew the corn uncooked. They are equally true of the first men who started to keep herds of cattle, instead of killing wild bulls whenever they had an opportunity, and the said wild bulls did not kill them instead. Taming and herding the early domestic cow must have been a strenuous life indeed. Presumably, there was very little profit in it, and the percentage of prehistoric dairymen who were killed must have been enormous.

It is exactly the same in any other business, and no one who is not "likely to stand pretty good chances of proving conspicuously successful" ought to take up any business at all. Of course, every business has its limitations, and it would not do for everybody to go into the same business, or we should be in the position of the people of Iceland, who, according to the legend, live by taking in one another's washing.

There are some big businesses like running railways, or building ships, or growing corn, or breeding horses. There are some somewhat smaller businesses like making motor cars, or motor boats, or manufacturing buttons. There are other businesses which are smaller still, such as producing radium, or grinding six-foot lenses for telescopes; but every industry finds its own level, experiences its little

booms and slumps, and is alternately undermanned, or overcrowded, and the aviation business is going to be the same as any other.

The good men, and the men who can persuade other people that they are good men, will stop in it. Some men who might be good men in certain positions will be crowded out, because they get into the wrong positions, and the business itself will develop along certain various lines such as the production of military machines, the production of naval machines, and the production of purely sporting machines. The production of sporting machines alone ought, before many years are over, to be about as big a business as the breeding of hunters, and will appeal to very much the same sort of temperament, and the man who has got a real fondness for aviation, and who has some qualifications of brain or physique, may become either a managing director, a pilot, a designer, a salesman, an engine tuner, a carpenter, a metal worker, a clerk, or an office boy, in an aviation concern; but to say that there is never going to be anything in it for anyone, except those of conspicuous ability, is talking sheer nonsense.

Certainly, the better man will come out on top; but, so far as ordinary risks are concerned, to those who enter the business as a business, and not as aerial acrobats, the risk is no greater than is that of opening a sweetshop. If you do not run your shop properly, or open in the wrong position, it does not pay. If you choose your place properly, and run it as a business concern, it does pay, and there is going to be plenty of room in the aeroplane business for all sorts and conditions of men, so long as they do not all want to get into it at once.

#### Aerial Noises.

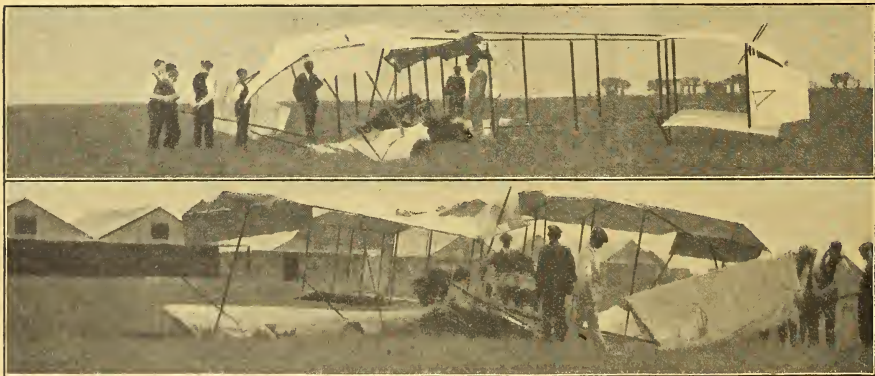
In the correspondence columns appears a letter from Mr. Arnold Button concerning the early morning noises of aeroplanes. One can certainly sympathise with people in the proximity of aerodromes who are awakened at dawn by the somewhat noisy exhaust of motors, and it would, therefore, be as well if, in their own interests, aviators who use other than rotary motors would fit some-

thing in the way of silencers. Silencers will undoubtedly become necessary on military machines, for an aeroplane which might pass unseen at three or four thousand feet would certainly not pass unheard with present day engines. There is also a good deal in Mr. Button's suggestion that drivers of aeroplanes should keep away from the closely inhabited areas as much as possible, and so cause as little discomfort as may be, purely as a matter of courtesy.

As a matter of fact, however, the trouble is very greatly exaggerated. No motor that was ever made makes as much noise as a railway train, and yet people take houses bordering on railway lines without considering the question of noise for a moment, for they know that they will simply get used to the noise after a night or two, and will pay no attention to it. An excellent example of this is the Heath Club at Weybridge, which is close alongside the railway. Certain friends of the writer's, who live in the country, stayed there, and complained they could not get a wink of sleep, whereas certain other friends who live alongside a railway when at home complained that the place was too quiet, because there were only occasional trains during the night, instead of a regular procession. The whole matter is entirely a question of what one is accustomed to.

At any rate, the aerodrome proprietors themselves ought to be fairly safe against any action which might be brought against them by their neighbours, for presumably they must be simply in the position of proprietors of garages, who have let accommodation to aeroplanes instead of motor cars, and one can scarcely imagine any town-dweller bringing an action against the proprietor of a motor garage, because his customers choose to bring their cars in or out at unholy hours of the night.

For the matter of that an aeroplane motor at half-a-mile distance cannot have such a reveillant effect as the matutinal milk-can, or the laryngeal gymnastics of the milkman's "jodel." Still, as Mr. Button says, it would certainly be better for all who wish for the welfare of their business and sport to avoid giving offence to the world at large.



Mr. E. de B. Whittaker's Farman after his recent spill at Eastchurch. Considering the way the seat has been smashed up, Mr. Whittaker was lucky to get off with a broken arm and undamaged legs.

# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz.:

35 h.p.

\* 60 h.p.

100 h.p.

\* Winner of Baron De Forest Prize of £4,000---1910.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESSEN, LONDON, N.W.

\*Phone : 125 Harlesden.

Telegrams : "Evotyn," London.

## HOWARD T. WRIGHT



110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.



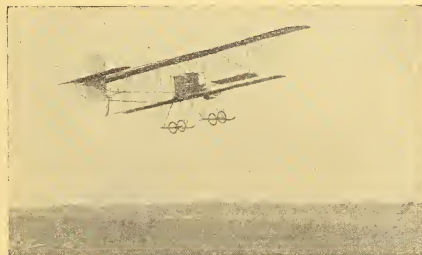
Eight Types

### Monoplanes

From 40 to 80-miles per hour

### Biplanes

From 36 to 50 miles per hour.



Catalogue on Application,

Winner of De Forest Prize



## The Aerial Farce.

The farcical affair which is being boomed by almost all the daily papers under the name of the "Aerial Post" was inaugurated with even more than the flamboyance one might have expected on Saturday last, and many thousands of misguided people paid to enter the Hendon aerodrome, as they did on the occasion of Védérines' benefit, to see very much worse flying than they could see at the same aerodrome any fine afternoon.

The only solitary bright spot in the whole pitiful proceeding was Gustav Hamel's really fine flight, which was made simply because, if he had not sacrificed himself, the first instalment of the so-called "Aerial Post" would not have been carried by a British subject.

It was nothing short of criminal to send any man up in such a wind as that which was blowing on Saturday, and the fact that Hamel covered something like nineteen miles in between twelve and thirteen minutes shows that the wind speed must have been fully 35 m.p.h. Nevertheless, more credit would have been due to everyone concerned if, in the first place, the promoters of this absurdity had deliberately postponed their proceedings, or if, secondly, all the aviators had had sufficient solidarity to agree among themselves not to risk themselves and their machines on such a day in such a ridiculous cause.

When an Army aviator, even on manoeuvres, flies under dangerous conditions with a definite object in view, he is merely doing his duty and risking his life for his country's good, so that something may be learned for military purposes and for the science of aviation, but in this case nothing has been learnt. Hamel has done far more valuable flights on many other occasions—flights which have passed absolutely unnoticed, not only by the ordinary reporters of the lay Press, but by correspondents who profess to be something of specialists in aviation.

As it is the papers have been full of delirious descriptions of impossible happenings, photographs of people who have done more harm to aviation than good, or who have had nothing whatever to do with it till now, and of speeches by people who had not the remotest idea of what they were talking about.

THE AEROPLANE is very jealous of the good name of aviation, and the writer firmly believes he is voicing the opinion of those who regard aviation seriously when he says that this affair is bringing aviation to the level of a provincial circus.

The aeroplane has already proved its value as an aid to scouting work on land, and before long it will do so at sea; it has already shown that in cheaper form it will provide magnificent and not very expensive sport. But the best friends of the aeroplane are not so foolish as to think that in the near future it can compete for the regular transport of goods or passengers with the ordinary railway train, or the slightly less reliable, if more enjoyable, motor-car.

In another few years, possibly in another few months, men will use their aeroplanes to pay visits in the country much in the same spirit as that in which they used their cars ten years ago, when motoring was a sport and not a matter of everyday conveyance, but to put it up in competition with a regular service, as has been done in this futile "Aerial Post," is merely to advertise the faults of the aeroplane, as we know it in its present embryo form, without in the least advertising its virtues when viewed as a military or sporting vehicle.

On Monday morning poor Mr. Charles Hubert went up at Hendon on a military Farman machine, which has already had two bad accidents, and had a fall which has injured him for life. He had started with a 200 lbs. load of letters to take them for their nineteen-mile airing. Now Hubert is a very fine flyer, but that particular machine is known to be almost impossible to handle in a wind, and he had expressed to the writer, only a few days before, his firm intention never to fly it again; yet, tempted by the prospects of notability, or possibly by mere prospects of gain, he took that machine up because he had nothing else to fly, and he has paid the penalty for doing so.

Everybody must sympathise with him because flying is his means of livelihood. He might have flown for months, as he has already done, without seriously hurting himself, if he had only had his regular instruction and demonstration work to do, for he knew perfectly well when it was dangerous to fly; yet because of the pressure brought to bear on him he is now an invalid, at any rate, for a considerable time, simply through this "postal" imbecility.



Charles Hubert, the victim of the farce.

Mr. Driver, another pilot who was engaged for this work, went up on another Farman and came down a considerable distance from Windsor, yet presumably those who know nothing about aviation will still prate of the "success of the Aerial Post." All one can do is hope that poor Charles Hubert may be the only victim.

Let those who receive those futile little bits of paper, with their childish indications that someone has been playing at postmen, remember that each of them has played its part in causing the pain now being borne by Charles Hubert lying in hospital, and let him or her thank their stars that they are not also responsible for some brave but foolish man's life.

Quite another matter is the act of Mr. B. C. Hucks, the aviator who on Monday flew across the Bristol Channel from Weston to Cardiff in 16½ mins., and delivered a letter from Mr. R. C. Tombs, the ex-controller of the London postal service, who is at present staying at Weston, conveying greetings to Mr. T. S. Faiggray, the Cardiff postmaster. In this case the terrestrial delivery of a letter from Weston to Cardiff is a lengthy business, and an aerial post, per hydro-aeroplane, might well become a regular service, and one involving hardly any danger to the aviator at any season of the year.

### Ireland's Backwardness.

News reaches THE AEROPLANE from Ireland that although the Irish Aero Club put up a prize last year for Irish aviators, and though the condition specified was that the prize was to be competed for before the end of September, the Irish Aero Club has not yet published any rules in connection with the prize. At the present moment the only Irish aviator is Mr. Harry Ferguson, but he has not yet got his pilot's certificate, owing to the difficulty of getting observers from Dublin to be present at his trial flights at the same time as the weather is suitable. Surely there should be no difficulty in appointing members of the Irish Automobile Club, which is more or less allied to the Irish Aero Club, to observe the test flights at any moment.

The slowness of Ireland in taking up aviation, considering what a number of Irishmen have distinguished themselves as aviators, is absolutely lamentable. However, there is some slight prospect of things improving before very long.

# GREEN'S ALL BRITISH AERO ENGINES

are Reliable, Strong, Light and Highly Efficient.

Many Records have been made with these famous motors. They have been adopted by H.M. War Office, and a Green was the only British Engine to finish the £10,000 Circuit of Great Britain. It had all parts sealed and intact.

Average weight 4 lbs. per h.p. Two sizes, 30-35 h.p. and 50-60 h.p.

Particulars on request.

THE GREEN ENGINE CO. (Sole Licensees under the Green's Motor Patents Syndicate, Ltd.) 55, Berners St., London, W.

MAKERS FOR THE PATENTEES—THE ASTER ENGINEERING CO., LTD.

E.H.G.

## VALKYRIE MONOPLANES.

THREE TYPES.

40-80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES,

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

TUITION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

THE AERONAUTICAL SYNDICATE, LTD.,

ESTABLISHED MARCH, 1903.

COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## £650 The Flanders Monoplane

(TWO OR THREE SEATS).

READY TO FLY.

60-80 Green Engine ("Circuit of Britain" type).

50-60 miles an hour [L. Howard Flanders, Brooklands, Weybridge].

## BLACKBURN MONOPLANES.

TUITION

Exhibition Flights Arranged

The BLACKBURN AEROPLANE Co.,

BALM ROAD, LEEDS.

## CLIFT AERO MAPS.

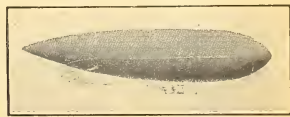
## Clift Aero Compasses.

Used in the "CIRCUIT OF BRITAIN" and all cross-country flights. Clift Maps were used by Vidart, Kimmerring, Valentine and others in the European Circuit, and by the majority of flyers in British Circuit.

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators. Necessities for the "CIRCUIT OF ANYWHERE."

For terms, write—ERIC CLIFT, c/o "The Aeroplane," 166, Piccadilly, W.

E. T. WILLOWS LTD.  
AERONAUTICAL ENGINEERS  
SPECIALITY: WILLOWS' DIRIGIBLES  
24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM





## AIR CURRENTS.

## Simonne and the "Aerial Post."

Simonne thoughtfully pricked in the chest a blue and gold bird that she was embroidering. - I like the animals of Simonne's creation, for they have an artistic valiance of colour that inclines me to pantheism.

"What is it that the aerial post is?" she asked, musingly. "By Jove, it's a fine thing, you know; it's a great historic event. You ought to be sure and send some cards by it."

"Tiens, it is good; I finish this thread and you drive me to the Post Office; go, prepare yourself."

"It's no use going to the Post Office, you know. You must go up to a particular shop in London."

"But I had the idea it was a post."

"So it is, of course; but it's not an ordinary post, you see. You have to go to a special shop, buy the cards for 6d. each, and then you post them, you see."

"But I do not understand. Why is it you pay 6d. for a postcard? Is it not that they only cost a penny?"

"Of course, yes! but not in this case. You see, it's very expensive; you have to put the letters in a special box, and then a motor van takes them to Hendon Aerodrome, and then an aeroplane takes them from there to Windsor and gives them to the real Post Office. I think it's jolly good value for 6d."

"Ah! so! then I think your explication *très soite*."

"But I assure you that's what happens. I think it's a wonderful thing."

"I do not believe you, so I read the paper."

I contentedly watched Simonne as she wrinkled her little forehead over the epulence of the D.T.'s English. There is ever around Simonne a faint elusive perfume of lily of the valley, and as it trailed around me in the warm sunny air the problems of the aerial post receded into dim, misty regions.

"Attend to me; see, you are wrong. Do you hear?"

"I beg your pardon; I was dreaming, dear lady."

"Then it is impolite to dream," said Simonne, and her brown eyes wore a bland expression as she slowly looked at me.

## Things the Aeroplane Can, Might, and Should Do.

Inspired no doubt by the so-called "Aerial Post," a certain journalist sends the following "new items," as he is pleased to call them. THE AEROPLANE can vouch for the fact that they have no more truth in them than the average daily paper's description of an aeroplane accident:-

(a) As an improvement on the well-known "My Valet" system, it has been arranged, thanks to the energy and foresight of Colonel Wonderham, late of the Horse Marines, and Mr. Luke Warm, that gentlemen wishing to have their clothes pressed can leave them at the Hendon Aerodrome before 5 a.m. any morning, whence they will be transported by several well-known birdmen to Brooklands, where the pressing will be done by the local lawn-mower, and where the clothes may be called for on the following day.

(b) Through the kindness and tenderness of Lieutenant Gazheim, late of the Swiss Navy, and Mr. Liverpool, arrangements have been made with the *Referee* Fresh Air Fund by which several well-known airmen have agreed that, at a charge of 10d. each, children, previously delivered carriage paid to the Hendon Aerodrome, will be transported by aeroplane to the country and left there.

(c) By arrangement with the Chancellor of the Exchequer, and thanks to the business acumen and perspicuity of Major Vindibus, formerly despatch-bearer to the King of Andorra, and Mr. Lewisham, arrangements have been made by which the salary cheques of all members of Parliament who have refused to receive their stipends shall be delivered in bulk to the Hendon Aerodrome, where they shall be sorted out and handed to various well-known airmen, who will pursue the recalcitrant members to their lairs and compel them to receive their remuneration at the point of the propeller.

(d) Thanks to the hygienic proclivities and therapeutic ability of Surgeon-Major Remoutham, late of the Moroccan Army Medical Corps, and Mr. Ludwig Wasserchen, arrangements have been made with Messrs. Chalk and Duckem, the well-known dairymen, by which families may have their Bulgarian milk delivered at the Hendon Aerodrome, whence it may be transported, wind and weather permitting, by well-known cloudmen to whatever recreation ground may be nearest the customer's residence, where it may be collected next morning.

"See, the paper says: 'Thus the public will be enabled to purchase, address, stamp, and post aerial missives, and witness their despatch from the aerodrome to Windsor or other destinations in any part of the world to which they are addressed.' So there, it is a proper post; you are ever wrong."

"Of course, it's a proper post; well, that's to say it is after a bit. I mean, at first it's only what you might call a post."

"Oh, *taisez-vous*, prepare to take me to the Post Office."

"Really, it's no use going there; we must go to London. I'd love to drive you up, you don't know how."

"But I do not wish to go to London, so it is not any use. I go and ask Fred to take me."

"Please, please, listen to me, dear lady. I assure you I'm right. You see, we have to buy these special cards and then go to the special box to post them."

"But that is not a post."

"Well, I mean put them into a special box, and then they are taken to Hendon, and then to Windsor, and there they are taken to the Post Office and sent to the ends of the world."

"*Mon Dieu*, you are *agaçant*; you say the same thing over and over again."

"But it's true."

"Ah, *non!* You tell me that, *suppose* you want to send me a letter here, you have to go to London, and it take all the day about the country and comes back here to the Post Office and the *facteur* leave it in the morning. *Eh! bien!*"

"Dear lady, I'd walk over the steppes of Siberia to send you a letter."

"*Ne soyez pas bête*. That is not what I ask, and you do not know."

"You see, it's for a charity; that's why—"

"Ah! that is too strong and the sun is too hot, so I depart," and Simonne went down the shady path humming a blithe air and flicking the tall hollyhocks with her embroidery, and they nodded on a level with her gleaming hair, while I tore up the D.T. R.G.

(e) By arrangement with the Chief Secretary for Ireland, Havildar Won Dham, of the Ghoorka Submarine Service, and Mr. Loo Wee Poo, the eminent Chinese reformer, have organised a special service whereby, on the passing of the Home Rule Bill, a specially prepared copy of the Act, to which His Majesty will have appended his signature in token of his approval of the scheme, will be taken by a District Messenger to the Hendon Aerodrome, whence it will be transported by a well-known atmospheric acrobat to the constituency of the Chancellor of the Exchequer, where at the seaport of Pwllheli it will be handed over to Mr. Burgess, who will swim the Irish Channel carrying the Act in his mouth, thus delivering it orally, aqueously, and aerially.

(f) Messrs. Horrids, the famous universal stores, have undertaken, with the assistance of Ensign Ventabaconi, erstwhile of the Army of Monaco, and Mr. Levi Poluski, to arrange that goods hitherto delivered by their motor service to their customers' doors shall be in future delivered to the Hendon Aerodrome, whence they will be transported by popular denizens of the welkin to various other aerodromes, where the customers may find excellent sport for a week or so of the summer holidays in endeavouring to identify their own particular parcels.

(g) El Amirante Ventabaconi, Commander-in-Chief of the Navy of San Moreno, and Signor Poloni have been commissioned by the Amalgamated Ice Cream Company, of 1,091, Soho, to arrange for large quantities of their delectable products to be sent up to Hendon, whence after being placed in special porous cases fixed to the exhaust pipes, it will be distributed broadcast over the surrounding country by high-flying airmen. Intending customers are requested to place buckets, etc., along the line of route.

(h) It is understood that, annoyed by the incredulity of the public, and also by the lack of the usual interest in its personality displayed by the daily Press during the lily season, the Great Sea-Serpent has made arrangements with Cornet Windmup, Fellow of the Royal Society for Supporting Suppressed Snakes, and his friend, Mr. Pulhardy, to appear at Hendon via the Welsh Harp at an early date, whence he will be conveyed in detachments by several successful sky swoopers on an extensive tour round the United Kingdom. One is sure that this impressive sight will awaken enthusiasm in the hearts of the most unbelieving.



# GUSTAV HAMEL

(Holder of World's Records for  
speed at 5 and 10 Kilometres)

IS OPEN TO GIVE A LIMITED NUMBER OF  
**EXHIBITION FLIGHTS**

FOR TERMS APPLY TO HIS AGENTS:

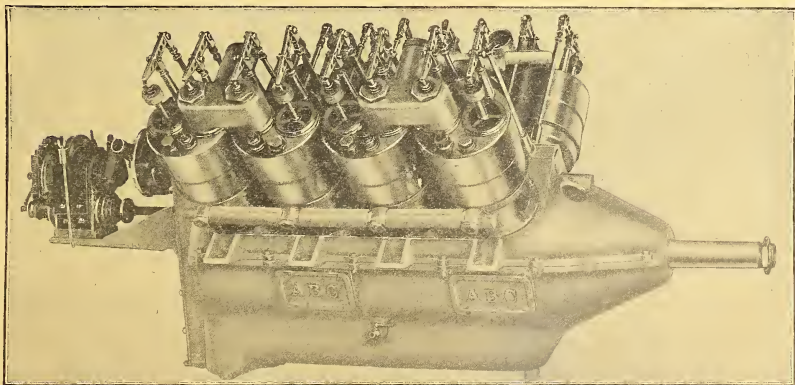
**The Universal Aviation Co., Ltd.,**  
166, Piccadilly, W.

## **A. B. C. AEROPLANE ENGINES**

Manufactured by the All - British (Engine) Co., Ltd.

40-h.p. 4-Cyl. Vertical, £225;      80-h.p. 8-Cyl. "V" Type, £450.

(Also a 120-h.p. 12-Cyl. "V" Type).      Under 3 lbs. per B.H.P.



**London Agents:** The Universal Aviation Co., Ltd., 166, Piccadilly, W.

## Side-Slips and Spiral Dives.

Side-slips are usually discussed among aviators with awestruck voices, bated breath, and fingers tightly crossed or clutching in a fierce grip the nearest piece of wood. The sensation itself is horrible, as will be realised by any experienced and imaginative cyclist, and, what is worse, the cause is doubtful and the cure uncertain.

The side-slip very seldom occurs in straight flying—it happens, on certain machines, when turning, and more especially on sharply-banked turns. The symptoms vary with the machine and the pilot, but generally they are that the machine begins to drop inwards on the turn, refuses to obey any controls, and, according to the height and the machine, either hits ground while dropping sideways or swings round and does a nose-dive. An examination of various accidents of this kind is rather instructive.

The first and most obvious cause in several cases has been lack of power—either through the natural iniquity of the engine or through the foolishness of the pilot in trying to climb while turning.

There seems to be an essential speed for machines, below which the machine, though it keeps up, is hopelessly unsteady, and will not answer its controls. When suffering from lack of power the tail drops on the turn and the machine begins to lose way, until finally it gets below this "critical speed," very much like a ship losing steerage way. Then it hesitates a moment and begins to side-slip.

A different case was that of a racing machine, with very small wings and a very large engine—and, of course, no dihedral. Here the pilot had to use most of his warp to keep the left wing up on the straight owing to propeller torque; when half-way round a turn a little gust touched him and banked the machine just over the safe limit. The warp was hard over already, and in spite of its power the machine began to dive. It kept a beautifully straight course, heavily banked and diving, and hit with the left wing-tip. Here the cause was simply that the wings were too small to withstand the heavy reaction torque of the engine, especially as there was not much warp on the machine.

Occasionally a variety of side-slip occurs after a sudden gust—particularly on machines with flaps or ailerons. This is caused in a very simple manner. The gust cants the machine over, and the pilot pulls down the flaps of the lower wing. This gives more lift, but at the same time enormously increases the drift on that side. If the rudder (as is usually the case) is not large enough to correct this the machine, instead of righting itself, begins to turn instead, and then frequently

side-slips. It is a fairly simple matter to calculate out the necessary rudder surface to compensate the flaps or warp, but very few constructors seem to do this.

Another and rather curious point of design which gives rise to the trouble is a tail with a negative lift.

Two machines known to me have had this, and the trouble has been the same in each case; the machine flies splendidly on the straight, and has plenty of power. But let the pilot take a turn with the slightest bank and the machine at once takes charge, and turns more and more sharply, increasing its bank till it either side-slips or does a spiral dive.

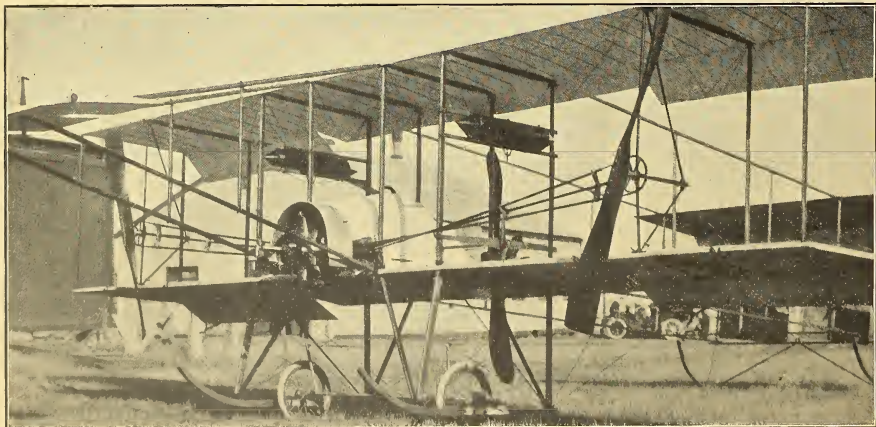
This is the reason: When a machine banks over the tail is obviously no longer horizontal. If it is a non-lifting tail this is of no importance. If the tail has a negative lift, i.e., a downward pressure, the sideways position of the tail means that part of this pressure is pushing the tail outward. This causes the machine to turn more sharply, which naturally increases the bank, so that the evil increases rapidly.

It will be observed that I have taken the "spiral dive" as a form of side-slip. This is probably correct, for the two are closely connected. When a machine starts to side-slip the motion causes a sideways air pressure on the fuselage (if enclosed), the rudder, and the vertical fin (if present). In the Farman type machine the only vertical surfaces are the rudders. In a modern monoplane there is usually a long, covered-in fuselage as well, so that the pressure is much greater. The result is that, while the Farman will side-slip almost indefinitely, the pressure set up in the case of the monoplane causes the machine to slew round and dive nose first. While this is occurring the machine, of course, follows a spiral course. When the nose is down and the dive fairly straight, the machine is doing a *vol piqué*, and is under control, so that the quicker this happens the better.

Thus, taking a broad view, it appears that to prevent side-slipping as far as possible there must be ample power; enough warp to overcome the engine torque, besides balancing the machine; enough rudder power to overcome the warp if necessary; and a tail which is either non-lifting or which has a slight positive lift. It must be remembered that a horizontal tail has a slight negative lift, for it is more or less affected by the down-draught from the planes.

Lastly, since there is always the chance of a gust, there should be a fairly large surface (rudder, fin, or enclosed fuselage) behind the centre of lateral pressure, so that if a side-slip does occur it quickly changes to a nose-dive.

P. K. TURNER.



The new 100 h.p. Short biplane, showing the engine housing, and the crossed chain. The solidity of construction is plainly shown, as is the general simplicity of the machine in spite of its size.

## World's Records.

The following records are those at present recognised by the International Federation, with the most recent performances :—

### Speed on Closed Circuit.

AVIATOR ALONE.

5 kil.	...	Nieuport	Châlons	16 June, 1911	2 18 25
10 kil.	...	Nieuport	Châlons	16 June, 1911	4 30 25
20 kil.	...	Nieuport	Châlons	16 June, 1911	9 14 45
30 kil.	...	Nieuport	Châlons	16 June, 1911	13 45 30
40 kil.	...	Nieuport	Châlons	16 June, 1911	18 31 35
50 kil.	...	Nieuport	Châlons	16 June, 1911	23 10
60 kil.	...	Nieuport	Châlons	16 June, 1911	28 15
150 kil.	...	Leblanc	Etampes	12 June, 1911	1 16 25
200 kil.	...	Aubran	Bordeaux	18 Sept., 1910	2 18 30 45
300 kil.	...	Bourgnone	Buc	31 Dec., 1910	4 30 45
350 kil.	...	Bourgnone	Buc	31 Dec., 1910	4 17 26 15
400 kil.	...	Bourgnone	Buc	31 Dec., 1910	4 50 45
450 kil.	...	Bourgnone	Buc	31 Dec., 1910	5 05 35 15
500 k. l.	...	Bourgnone	Buc	31 Dec., 1910	6 7 45
600 kil.	...	Feurys	Buc	1 Sept., 1911	1 10 30
700 kil.	...	Feurys	Buc	1 Sept., 1911	1 10 46

## PILOT AND ONE PASSENGER.

5 kil.	...	...	Bussos	...	Betheny	1 Feb. 1911	3 15 45
10 kil.	...	...	Nieuport	...	Chalons	6 Mar. 1911	5 58 15
20 kil.	...	...	Nieuport	...	Chalons	6 Mar. 1911	11 54 34
30 kil.	...	...	Nieuport	...	Chalons	6 Mar. 1911	17 53 14
40 kil.	...	...	Nieuport	...	Chalons	6 Mar. 1911	23 57 35
50 kil.	...	...	Nieuport	...	Chalons	6 Mar. 1911	29 58 35
100 kil.	...	...	Nieuport	...	Chalons	6 Mar. 1911	58 30 35
150 kil.	...	...	Nieuport	...	Chalons	6 Mar. 1911	1 28 37 45
200 kil.	...	...	Level	...	Chactres	9 July 1911	2 38 26 25

PILOT AND TWO PASSENGERS.

10 kil.	...	...	Nieuport	...	Châlons	...	9 Mar., 1911	6
20 kil.	...	...	Nieuport	...	Châlons	...	9 Mar., 1911	11 59 2/5
30 kil.	...	...	Nieuport	...	Châlons	...	9 Mar., 1911	17 52 3/5
40 kil.	...	...	Nieuport	...	Châlons	...	9 Mar., 1911	22 44 2/5
50 kil.	...	...	Nieuport	...	Châlons	...	9 Mar., 1911	29 37 2/5
100 kil.	...	...	Nieuport	...	Châlons	...	9 Mar., 1911	59 8

## PILOT AND THREE PASSENGERS.

10 kil.	...	...	...	Busson ...	...	Betheny ...	10 Mar., 1911	6 16 3/5
20 kil.	...	...	...	Busson ...	...	Betheny ...	10 Mar., 1911	12 34 1/5
30 kil.	...	...	...	Busson ...	...	Betheny ...	10 Mar., 1911	18 48
40 kil.	...	...	...	Busson ...	...	Betheny ...	10 Mar., 1911	26 5 3/5
50 kil.	...	...	...	Busson ...	...	Betheny ...	10 Mar., 1911	31 23 1/5

PILOT AND FOUR PASSENGERS.

5 kil.	...	...	...	Busson ...	Béthyeny ...	10 Mar., 1911	3 34
10 kil.	...	...	...	Busson ...	Béthyeny ...	10 Mar., 1911	7 8
20 kil.	...	...	...	Busson ...	Béthyeny ...	10 Mar., 1911	14 0 3/5

**Greatest Speed.**

Aviator alone ...	Hamel ...	Eastchurch	1 J ly, 1911	per hour
Pilot & 1 psngr. ...	Nieu ort	Chalons	6 Mar., 1911	81 04 miles
Pilot & 2 ps grs. ...	Nieuport	Châlons	9 Mar., 1911	103 k. 211
Pilot & 3 psngers ...	Busson ...	Betheny	10 Mar., 1911	102 k. 855
Pilot & 4 psngrs. ...	Busson ...	Betheny	10 Mar., 1911	96 k. 308
				87 k. 251

## Distance.

Aviator alone ...	Fourny...	Buc ...	1 Sept., 1911	720 k.
Pilot & 1 psngr.	Level ...	Chart s ...	30 July, 1911	241 k. 790
Pilot & 2 psngs.	Nieuport	Châlons ...	9 Ma., 1911	110 k.
Pilot & 3 psngs.	Busson ...	Bétheny ...	10 Mar., 1911	50 k.
Pilot & 4 psngs.	Busson ...	Bétheny ...	10 Mar., 1911	25 k. 740

## Time.

AVIATOR ALONE.

1/4 hour	...	Leblanc	...	Etampes	...	12 June 1911	30 k.
1/2 hour	...	Leblanc	...	Etampes	...	12 June 1911	60 k.
1 hour	...	Nieuprot	...	Châlons	...	16 June 1911	129 k.
2 hours	...	Aubrun	...	Bordeaux	...	18 Sept. 1910	167 k. 500
3 hours	...	Leblanc	...	Etampes	...	12 June 1911	200 k.
4 hours	...	Bourrique	...	Buc	...	31 Dec. 1910	325 k. 905
5 hours	...	Bourrique	...	Buc	...	31 Dec. 1910	407 k. 675
6 hours	...	Bou nique	...	Buc	...	31 Dec. 1910	490 k.
7 hours	...	Leblanc	...	Etampes	...	12 June 1911	500 k. 935
8 hours	...	H. Farman	...	Etampes	...	18 Dec. 1910	421 k.

## PILOT AND ONE PASSENGER.

TWO AND ONE PASSENGER.						
1/4 hour ... ..	Busson ... ..	Betheny ... ..	11 Feb., 1911	23 k.	540	
1/2 hour ... ..	Busson ... ..	Betheny ... ..	11 Feb., 1911	46 k.	514	
1 hour ... ..	Nieuport ... ..	Châlons ... ..	6 Mar., 1911	101 k.	250	
2 hours ... ..	Level ... ..	Chartres ... ..	9 July, 1911	151 k.	85	
3 hours ... ..	Level ... ..	Chartres ... ..	9 July, 1911	224 k.	850	

### Duration

Duration.				H	M	S
Aviator alone ...	Fourny...	Buc ...	1 Sept., 1911	11	1	29
Pilot & 1 pnsgr. ...	Lt. Gerrard...	Pastchurch	16 Aug., 1911	4	15	0
Pilot & 2 pnsgrs. ...	Gr. White ...	Untd. States	30 Oct., 1910	2	51	
Pilot & 3 pnsgrs. ...	Busson ...	Betheny ...	10 Mar., 1911	31	23	1/5
Pilot & 4 pnsgrs. ...	Busson ...	Betheny ...	10 Mar., 1911	17	23	1/5

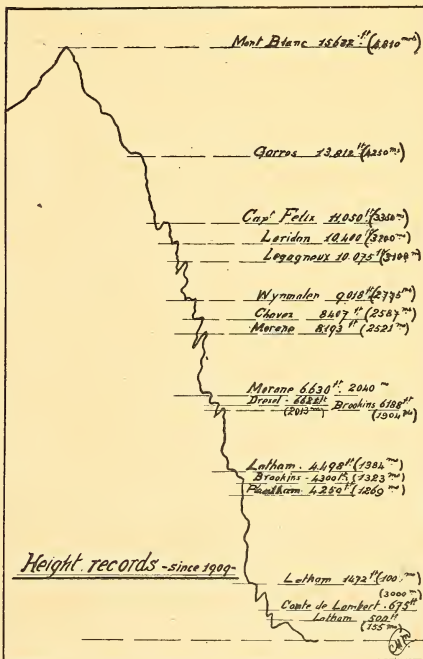
## Height.

Aviator alone	Garros ...	Dinard ...	4 Sept., 1911	4 k.	250
Aviator & 1 psngr.	de Montalent	Brooklands	10 Aug., 1911	2 k.	250
Aviator & 2 psngr.	Bréguet ...	Douai ...	17 Aug., 1911		90

### Height Records.

The following is the progress of the World's Height Record since it was first officially controlled :—

Date.	Name.	Place	Height feet meters
29 Aug., 1909.	Latham	Reims	693 155
18 Oct., 1909.	Comte de Lambert	Paris	575 160
1 Dec., 1909.	Latham	Châlons	1,472 453
7 Jan., 1910.	Latham	Onalons.	3,350 1,000
16 Jan.	Paulhan	Los Angeles	4,124 1,259
17 Jan.	Brookings	Brookings City	4,280 1,304
7 July.	Latham	Reims	4,988 1,534
10 July.	Brookings	Atlanta City	5,288 1,904
29 Aug.	Morane	Le Havre	6,021 1,831
3 Sept.	Morane	Deauville	6,630 2,021
8 Sept.	Chavez	Des Moines	8,193 2,491
9 Sept.	W. J. W. Allen	Des Moines	8,221 2,505
9 Dec.	Legagneux	Marmelon	9,019 2,757
9 July, 1911.	Loridan	Paris	10,075 3,100
4 Sept.	Calder	Mourmelon	10,400 3,200
4 Sept.	Garros	Paris	11,950 3,640
4 Sept.	Garros	Dinard	13,812 4,220



**The No. 2 British Michelin Prize.**

On September 11th Mr. S. F. Cody made a fine flight for the Michelin Speed Prize. Driving his "Circuit" machine, with 60-80 h.p. Green engine, he left Farnborough at 5:36 a.m. and, flying over Andover, he made a good line thence to Hendon, from Hendon to Brooklands, and so back to Farnborough. He landed at the latter place at 11:45 a.m. after 125 miles, and the flight is a more than usually good one, for soon after 6 a.m. a very puffy south-east wind got up, which steadily increased till by 8 a.m. it was blowing really stiff gusts. From Andover to Hendon and thence to Brooklands, the wind was light and steady, but always or ahead, and it accounts for his comparatively slow speed.

This is Mr. Cody's third attempt at the Michelin Circuit, both his other attempts having failed owing to sheer hard luck, and not through any defect in his engine.



## The Week's Work.

### Monday, September 4th.

**BROOKLANDS.**—Cadet Robinson on Dep. doing straight hops and improving, but ran into ditch at end of ground. Damage almost nil. Shock to nerves of relation only. Machine flown back. Garne rolling on Dep. a New Bristol No. 65 now ready for work. Fleming and Pizey both did test flights, latter up to 300 ft. Pizey then took up Captain Richie, a new pupil. Lieut. Manisty practising on Henrietta for half hour. Apologies to him for suggesting that he ever broke anything. Temporary aphasia, due to hot weather, made Brooklands noter mentally ascribe to him demolition of Henrietta effected by Senhor Perusjo some time ago. Bertie Rippen doing straight flights, and Petre (the Monk) a couple of circuits.

**THE PLAIN.**—Day's work of Bristols started by solo flights by Lieut. Newall and Pitman. Both did neat circuits, after which Jullerot, Busted, and Pixton went on with tuition work. Lieut. Watts made a very good solo round Fargo and Stonehenge, landing well. In evening conditions rather tricky, but tuition work went on briskly. Jullerot took up Lieut. Stroker; Busted took Lee, Lieut. Stroker, Captain Steele Hutcherson, and Mellersh; and Prior took Lee. Several visitors were taken for flights, which apparently whetted their appetite for aviation. Lieut. Montefiore flew a good solo for quite 20 mins.

### Tuesday, September 5th.

**BROOKLANDS.**—Lieut. Chinnery, of the Coldstreams, and Garne rolling on Dep. Robinson doing more straight flights. Cecil Pashley doing good circuits on Humber, with Clergét type engine. He and his brother Eric have now bought Humber monoplane formerly flown by Pequet, and hope to go for some all-British prizes. To-day's work ended with cracked water-jacket, owing to machine being run without oil previous to their purchase. Cylinders sent to Coventry for new jackets. Pizey on Bristol up with Captain Richie, and Fleming later up with same pupil. Good idea giving pupils flights with different pilots. Teaches different methods of handling, and enlarges pupils' experience. Later Pizey doing testing flights alone. Manisty out on Henrietta for three-quarters of an hour, and got his certificate after long and much interrupted course of training. Petre doing circuits on same machine, and then Rippen hopping, but stopped by big-end bolt going loose, in the Clergét.

**THE PLAIN.**—Prior gave a fine exhibition of speed flying on new Bristol monoplane, which seems to create enthusiasm whenever it appears. He landed safely, presumably owing to engine stoppage, on very rough ground at Fargo. Busted took up Lee, Captain Steele Hutcherson, Lieut. Stroker, and several passengers. Pixton, after taking pupils, took Eroole, Prior's mechanic, over to Fargo, to start engine of monoplane again. Day's work finished by Lieuts. Stuart and Watts, Cadet Wheeler, and Lieuts. Newall and Montefiore making solo flights.

**HENDON.**—Ridley-Prentice up on school Valkyrie and flew four circuits. Captain Loraine followed with two very steady circuits. Barber carrying passengers throughout evening. Just before dusk Ridley-Prentice made a fine flight of five

circuits at 200 ft. Gassler making long straight flights before breakfast on Chanter-Bériot; improving rapidly. In evening Chanter, Gassler, and Hamilton Ross all out flying in turn. Two Bériots now in commission and doing well.

### Wednesday, September 6th.

**BROOKLANDS.**—Chinnery and Garne busy on school Dep., and Robinson also making progress. In evening Lieut. Porte and Bell on new "certificate" Dep., specially bought for use of pupils when actually ready to go for certificates, each did four circuits, and Chinnery out again on school Dep. Fleming out on Bristol with Capt. Richie, and later up as passenger with Richie in front to teach him use of rudder bar. Then Pizey up with Richie, and later both Pizey and Fleming up with passengers. Both firmly established already as prime favourites at Brooklands. Hard workers and fine flyers, but always cheerful. So much so that their "Plain" nicknames of Big 'Appy and Little 'Appy are likely to stick to them here. About a foot difference in heights, and four stone or so in weights, so make a charming contrast. Brereton, Bristol pupil from Salisbury Plain, finishing course at Brooklands, doing solos. Petre and Rippen out on Henrietta for over an hour.

**THE PLAIN.**—Jullerot made trial on Bristol, then Lieuts. Watts, Newall, and Stuart for solo flights. Busted did some weight carrying by taking Lieuts. Stuart and Newall for two circuits, the total weight being 34 st. He then took Lee, Lieut. Stroker, and Captain Steele Hutcherson each for two flights. Jullerot invited a cavalry officer to fly over cavalry school. Passenger declared himself badly bitten by aviation, and decided to become pupil of school.

**HENDON.**—Ridley-Prentice out at 5.30 a.m., making circuits before handing over school Valkyrie to Captain Loraine, who flew with great confidence. Barber gave numerous passenger flights to Loraine and Chambers. Before breakfast Ridley-Prentice made two circuits in tricky wind. Weather conditions ideal in evening. At 6 p.m. Barber ascended with Scott-Brown, who took up cinematograph apparatus. Long flight made over the surrounding country, and interesting pictures should result. At same time Ridley-Prentice out on Type A flying five circuits landing on *vol plané* from 300 ft. Captain Loraine then made excellent flights, turns becoming very sharp, with correct banking. Rapid progress quite remarkable. Chambers made good straight flights. Barber carried numerous passengers, and, during intervals, did fine exhibition flying; spiral *vol plané* being particularly attractive. Ridley-Prentice made good flight of 25 mins., he also doing *vol plané* and sharp turns, and no little dexterity was required to keep clear of several machines in air at the same time. Gassler and Chanter flying before breakfast. Hubert, on old Farman, up well over 3,000 ft., unofficially breaking British biplane record rather badly.

**BRIGHTON.**—Great interest aroused by James Valentine appearing at motor gymkhana held in Preston Park. Left Shoreham aerodrome 4.14 p.m. Weather ideal for flying, and inhabitants vastly pleased. After a couple of circles he made splendid descent at north-eastern end of the park. Soon surrounded by large crowd, but perfect order kept. He left Preston about 6.10 p.m.—(C. A. C. Winchester.)



The Deperdussin "Certificate" machine at Brooklands with Gordon Bell at the helm. Mr. Lawrence Santoni, himself a certificated aviator, is standing alongside.

# Thursday, September 7th.

BROOKLANDS.—Captain Richie up on Bristol with Pizey behind giving good advice. Brereton up for brevet exam. flying well, but bungled all his landings, going too far, or too short, or landing with engine running. In evening Fleming showing Brereton how to land, and then Brereton practising. Then Pizey up behind him to show exact moment to flatten out. Very thorough system of teaching. Lieut. Wyness-Stuart, R.A., formerly pupil at Salisbury Plain, joined to do final course. Flying very well, but evidently puzzled by small ground. Capt. Richie doing first solo straight flights. Lawrence, certificated pilot and ex-pupil from Plain, doing practice flight to keep his hand in. Early morning, Dep. school out, Chinnery rolling and Robinson hopping on school plane. Porte and Bell each did three circuits on certificate machine, and in evening Chinnery did straight hops. Rippen on Henrietta had twenty minutes of straight flights, and Petre out morning and evening.

BRIGHTON.—Valentine gave exhibition of flying between West Pier and Palace Pier. Flew high several times, and made some magnificent *vol planés*, swooping down to within few yards of sea. Large crowd gathered on promenade. Valentine returned to Shoreham Aerodrome 5.30 p.m., after flying for about 40 mins. Metzgar Bros. and Leno continuing tests of their machine, which promises to give good results. Coffey and England not had their new tractor biplane out yet owing to propeller bursting just after starting up for initial flight. (C. A. C. WINCHESTER.)

HENDON.—Miss Trehawke Davies arrived at 5.30 a.m., but fog caused delay until 7 a.m. Barber then up with Miss Davies on Valkyrie racer, and quickly reached 700 ft. Too foggy to go far outside the aerodrome, and, after 30 mins., fine *vol plané* descent was made in front of hangar. 5.30 p.m. Barber brought out Valkyrie Type B, testing new Gnome engine. Meanwhile Ridley-Prentice gave fine exhibition flight at fully 500 ft. After 30 mins. he cut off and made good *vol plané*. Captain Loraine then made several circuits and figures of eight at 200 ft. Gassler and Chanter out before breakfast on Chanter Blériot, Hamilton Ross in afternoon, and Gassler in evening. Work at this school steady, and plenty of it.

# Friday, September 8th.

BROOKLANDS.—Garne, Chinnery, and Robinson all hopping on school Dep., and Chinnery later doing lengthy straight flights. Maurice Ducrocq out on Farman to put it in order after Workington flights prior to going to Norwich for exhibitions. Fleming doing test flights on Bristol, Capt. Richie doing good straight solo. Wyness-Stuart a good flight, finishing with very clean 150 ft. *vol plané*. Fleming showing figure turns to pupils. In evening Fleming up at 600 ft. Richie doing straight, and Wyness-Stuart circuit. Rippen on Henrietta out for an hour in morning, and Petre out in evening, stopped by tyre troubles.

HENDON.—6 a.m. Loraine flying very well on Valkyrie, doing many figures of eight and good *vol planés* descents. Chambers made good straight flights and then a circuit, flying very steadily. Barber, after a few solo flights, went off across country with lady passenger at 800 ft. Soon disappeared in the fog, but after 20 mins. reappeared from the direction of the Welsh Harp. High winds spoilt flying at week end. Hamilton-Ross, Chanter, and Gassler on Chanter-Blériot all out in afternoon.

# Saturday, September 9th.

BROOKLANDS.—Fulsome day. North-east wind and cold clouds all day. Bell out on school Dep. for few minutes at 6.30 a.m., but hopeless for pupils, so shut up shop. In evening Pizey and Fleming each tried couple of circuits on Bristol, being first time have had N.E. wind. Neither liked *remou* with wind this way, and paddock *remou* afterwards came as unpleasant surprise, sewage farm *remou* also had different aspect. Both pilots more respectful to Brooklands' pet air currents now. Their handling of the machine all the time was splendid, and No. 65 flies excellently. Altogether bad week, wind and heat *remous* very bad from 7.30 a.m. till 5 p.m. every day. Blondeau school out of work owing to troubles with the infallible rotary engine, and only got it working in time to rush off for exhibition flights at Plymouth. Avro school busy assembling new and very neat Avro (D-P-2-1) with 35 h.p. Green, and also immobilised by necessity for absolutely dissembling and rebuilding rotary engine. Flanders monoplane being rebuilt after recent bending. Ready to go for Michelin Cup in few days. To be piloted by Ronald Kemp, who should do well. Petre (the Painter) seduced from lengthy allegiance to Brooklands by prospects of future distinction with experiments on Handley Page monoplane at Fairport. All wish him luck, for he has makings of



Petre, on the Chanter Blériot, starting a banked turn.

a fine flyer, and besides long and intimate knowledge of theory and construction, has a thoroughly good fellow personally. Prospects generally good, many new pupils negotiating with various schools, and several fresh "assistants" joining constructors and experimenters. Sales of machines also in the offing.

THE PLAIN.—Chief event, taking of certificate by Cadet Wheeler; good performance for lad of fifteen, albeit big and burly for his age.

WESTON.—Hucks on Blackburn flying in fine style. Wind strong, but machine quite steady, and up for 20 mins. at a time, during which he circled Weston Pier. Landing for third time he damaged wing tip, but soon repaired.

# Sunday, September 10th.

BROOKLANDS.—No one out in morning except the Dep., which made a short flight. Windy all day, and still very puffly in evening when Pizey brought out Bristol. Rather badly pitched about, but Fleming also out after short delay for wind to decrease. While Fleming up, Spencer also appeared and took up passenger. Then Raynham on engine behind Avro, also Percival on "Oozely Bird," and Petre on Tienrietta, all five being in air together, but none up for more than couple of circuits. Certificate Dep. also, and Porte made good circuit followed by banked *vol plané* from over middle of sewage farm, owing to engine going wrong. Bell then tried, but engine pulling badly, so only did curves instead of full circuits. Fleming then took up Mrs. Wyness-Stuart, and afterwards Captain Nicholson. Pizey up with Captain Richie, but wind rising again and darkness coming on, Raynham left in possession of aerodrome, flying till dark.

HENDON.—Gassler out on Chanter monoplane in evening. WESTON.—Hucks on Blackburn crossed to Cardiff and landed there for first time. Left Weston 5.45 a.m., landed Cardiff Polo Ground 6.1.30 a.m. Wind behind put up speed to over 60 m.p.h. Hucks has arranged to give exhibitions at Cardiff at same time as Universal Aviation Company's pilots.



### Mr. Ridley-Prentice's Accident.

On Tuesday, the 12th, Mr. Ridley-Prentice took up the Gnome-Valkyrie for the first time. He was finishing his flight with a fast descent from about 20 feet when he found that his switch would not act. The machine hit the ground with the engine running all out, and Mr. Prentice was thrown out as the machine struck the ground. He suffered hardly any injury, having only a slight cut on the head and, of course, a severe shaking. He is expected to be on duty again in a day or two. The accounts which have appeared in the papers were apparently telephoned by some irresponsible person ignorant of the facts.

### Real Cross-Country Speed.

Leaving Amesbury at 6 p.m. on Monday on the new Bristol monoplane, Graham Gilmour started to go to Devizes, flying 700 to 800 feet up. Owing to mist over the Plain and a slight error in his compass, he missed Devizes, and flew on till he found a large town, which he recognised as Bath. Having got so far, he resolved to go on to Bristol, and soon reached Brislington, whence he made a line across the southern edge of the city to Clifton Downs and Filton, coming down finally in the field behind the Bristol Company's works at 6.30 p.m. He must have covered between 70 and 80 miles in the fifty minutes, so, even allowing for a following wind, the machine must be more than usually fast.

### At Lost.

Mr. Barber informs THE AEROPLANE that the Admiralty have arranged to take their two Valkyries to Eastchurch next week. It is now several months since Mr. Barber presented these machines to the country, and it is about time they were put into use, especially as they are so suitable for use with floats.

### M. Esnault-Pelterie's Explanation.

The following letter has been received from M. Robert Esnault-Pelterie, and explains itself—

Sir,—Following on the two terrible accidents which have just cost the lives of Capt. Carmine and Lieut. de Grailly, a very searching inquiry has been made to find the cause of these two catastrophes, which appear so much alike.

There has wrongly been talk of sabotage.

The two inquiries carried out at the same time by the Army and by myself have arrived at the same result, and I communicate them to you because I am convinced that this publication will be useful to you.

We have arrived at a conviction that in the wings, which are not of my make, glue was used to fix the fabric on the rear edge of the wing, in spite of my prohibition, and, perhaps, by the negligence of a workman. It was impossible to perceive this on the receipt of the wings, but we have been able to ascertain from the debris where the accident happened that so far as this glue was concerned it had lost all its strength. In spite of the coming apart of the material, thanks to their cleverness and coolness, the unfortunate officers had succeeded in almost reaching the ground in a practically normal manner, contrary to first reports published. Fate, unhappily,

willed that poor Capt. Carmine ran into a bank; while as to the unhappy de Grailly, who might have considered himself safe, his landing was almost normal, when from some unknown cause the petrol tank exploded, thus killing him at once—in his machine.

I believe it my duty to communicate the initial cause of these two terrible accidents to you, in the hope that this communication may serve to avoid a recurrence.

(Signed) R. ESNAULT-PELTERIE.



W. H. Ewen, the first man to fly the Firth of Forth, on the Deperdussin he used for that flight.

### A German Fatality.

An aviator named Eyring made an ascent near Esslingen on Saturday evening, though warned not to do so owing to the darkness. He came into collision immediately afterwards with a mark post, and received such injuries that he died. There is a growing tendency of late to fly in the dark, and it would be well if chiefs of schools were to discourage the practice, though, of course, some men can see better in the dark than others, and it is very tempting to fly just during that period of dead calm after the sunlight has absolutely vanished.



Miss May Sopwith and her brother on their new Wright biplane. Posted by Mr. Sopwith to "The Aeroplane" on Sept. 5.



## The Right-Hand Turn.

Translated from the French of Michel Corday, in "L'Auto."

He was a little lieutenant of engineers, with an ardent and ingenuous soul, and he was called Listel. He had long ago vowed himself to the cause of aviation. He knew the beginning of it from top to bottom. He venerated the gods, the apostles, and the martyrs. He marvelled at its miracles, he followed with all his heart its pacific crusades, and he burned to touch the high heavens in his turn, to be admitted among the initiates.

At Ravier's aviation school he made a happy début. The first day on which he mounted his monoplane he knew the joy of quitting the earth. At the end of three lessons he was emboldened to risk a turn, and he beheld not far distant the blessed day on which he would figure among the elect and capture his pilot's certificate.

But suddenly he came up against an unforeseen difficulty which at first seemed insurmountable. To satisfy the conditions of the test he had to turn in both directions, to the right hand as well as to the left; he had to describe figures of eight in space. But Listel found that he could not describe the figures of eight.

Was it that he had had so long the habit of always turning to the left, contra-clockwise, a habit which he had contracted during the interminable promenades round the courtyard of his seminary during the hours of his recreation, and afterwards during his period of training at the military school? Had it absolutely got into his blood? Had it acquired the imperious strength of an instinct, this custom which he had seen and followed on so many tracks and at so many meetings?

Anyhow he could not turn to the right. Every time he started on his right-hand turn he lost his self-assurance and his self-command, his power of control, and all physical action, and to avoid a fall he was obliged to go back to a straight line, or even to land. As a matter of fact, his apprehension grew at each attempt, and paralysed him beforehand. He even nearly persuaded himself that he had been stricken by a sort of personal infirmity, or that he was lacking in some particular sense. Nevertheless, he struggled bravely.

His haunting fear pursued him outside the aerodrome, and he practised himself in turning to the right on every possible occasion. Along the road he used to walk round trees; at home in his lodgings he used to circumnavigate the tables and chairs; in the town he used to promenade round lamp-posts and small buildings, and round the little square.

He even turned, always to the right, clockwise, round the

garrison bandstand, and on concert days he forced himself to face the current of the crowd who adopted the ancestral direction. But this training in defiance of custom had an unforeseen consequence.

In stemming the current of citizens congregated for the concert, Listel was brought to meet face to face with a beautiful young person accompanied by her mother, and the sight of her filled him with a great emotion. He found out soon that her name was Mademoiselle Bernier, and that her father was one of the great manufacturers of the district.

Smitten to the depths of his being, Listel trembled to think that undoubtedly he would never have noticed this charming girl if he had gone on turning in the same direction as the crowd. He saw in this meeting a sign from above, and swore to follow it. He followed it so well that a month later he was engaged to Simone Bernier.

Meanwhile he did not neglect his pilot's apprenticeship. He did not disguise from himself the fact that his position as an aviator raised his prestige in the eyes of Simone, and love stimulated still more his neophytic zeal.

At daybreak, at the hour when young girls are still asleep, he pursued his training with redoubled ardour; but, alas! he still experienced the same insurmountable repugnance to describe a figure of eight in space.

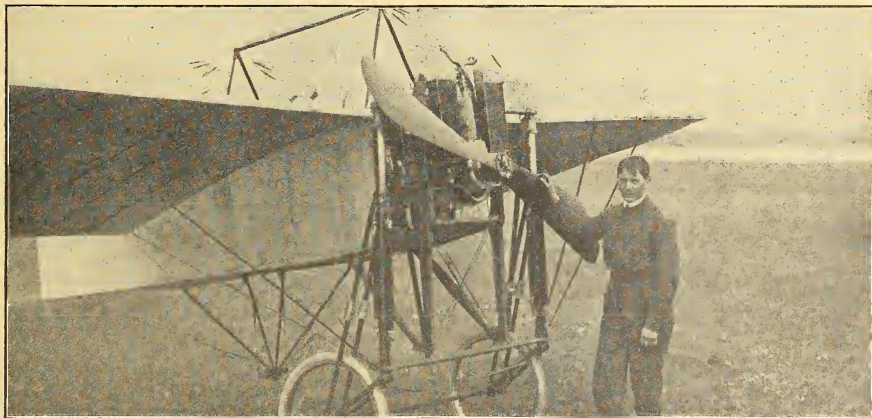
He worked harder, swearing to triumph in the name of Simone, and one morning, while well up in the air in his monoplane and raging against his accursed luck, an inspiration smote him: It did not matter about describing figures of eight in space; what he had to do was a capital S, the initial of Simone.

Immediately he was overwhelmed with despair. Would he never be able to trace in the air this letter, which his hand described on the margin of books and ledgers, on window-panes, in the dust of the road, on the bark of trees?

His heart beating, but resolute, he described the upper hook of the S, did the straight line, and commenced the lower hook. Upheld by the ardour of faith, deaf to the calls of apprehension, he completed the curve; twenty times he renewed the test, and twenty times he achieved it victoriously.

At last he could turn to the right, and the thought never came to him, or, if it did, he repulsed it with indignation, that at last he was properly trained, really cured, actually tuned up, and that he would reap that morning the fruit of his patient efforts. No! If he had triumphed over himself it was to trace in the heavens the initial of his fiancée.

C.G.G.



Pecquet, the French pilot of Humbers, who flew well in India and has been doing cross-country flights on this Humber monoplane at Brooklands. The machine now belongs to the brothers Pashley.



Gordon Bell, chief pilot of the Deperdussin School at Brooklands, where he has a number of pupils already making good progress. He learnt to fly on an Hanriot, and has the makings of a fine competition flyer.

#### Aviation at Cambridge.

Mr. H. W. Holt, a graduate of King's College, is building to his own patents a machine to carry one person, and the cost of it is said to be very low. When finished it is to be one of the lightest and smallest of machines. In many respects it differs from the type of machines now in use, and is largely an experiment; but the inventor has great faith in it, and if it should prove of practical utility Mr. Holt will certainly have done something towards bringing aviation within the reach of people of moderate means.

A Cambridge paper says:—"Mr. Holt is in his fourth year of residence at King's, and in 1910 took a second in the Engineering Tripos. He is in the Royal Engineers (Special Reserve), and it was while at Bulford Camp that he designed the machine which he is now building. Previous to this he had built three others, the first being in 1909, but they proved worthless through faulty design. In the present case he believes that he is on right lines.

"The full scientific name of the machine is the 'Dihedral triplane biplane tandem.' Its outside dimensions are about

6 ft. by 12 ft. long, and about 18 ft. broad. The area of the main planes is about 150 square feet, and the elevating planes are another 20 ft. The frame is in the fashion of a triangle with the apex uppermost, a reversal of the usual type. It has a tractor propeller, Cochrane's, 6 ft. 2 ins. in diameter, guaranteed to give 180 lbs. thrust. The engine is a 10-12 twin cylinder J.A.P., with a Hans Reynold chain drive, which is geared to 2½-1. This gives a propeller revolution of a thousand a minute, and should drive the aeroplane at about 30 miles an hour. Two gallons of petrol can be carried, which is sufficient to last two hours. The total weight of the machine, including the aviator, is 400 lbs.; and, given good ground, it should commence to rise within 50 yards at a speed of 25 miles an hour. Two mechanics could put it together or take it to pieces in half an hour.

"The greater part of the metal work has been done by Mr. Holt himself at the University Engineering Laboratory, Free School Lane, and the machine is being erected on the premises of Mr. Harry Williams, Victoria Park, Chesterton. Here the inventor has spent a good deal of the Long Vacation in building his aeroplane, and the beginning of September should see its completion ready for flying."

#### The French Manœuvres.

Crowds have been attracted daily to the aviation camps in the neighbourhood of Vesoul (Haute Saône) by the Army aviators participating in the manœuvres. The triumph of the aeroplane is all the more notable in view of the fact that the country to be flown over, abounding with ravines and valleys, is by no means ideal so far as landing places are concerned.

In a gusty wind on Saturday three groups of aviators, including Sappers Legagneux and Martinet, who are well-known civilian flyers now doing their period of military training, and Lieutenant Blard, Lieutenant Rémy, Captain Félix, Captain Bellanger, Lieutenant Chevreau, and Lieutenant Ducourneau, accomplished superb scouting feats. The first man to set out from Vesoul, Lieutenant Casse, had his elevator break while in the air, but he managed to retain some sort of control of his monoplane and landed safely.

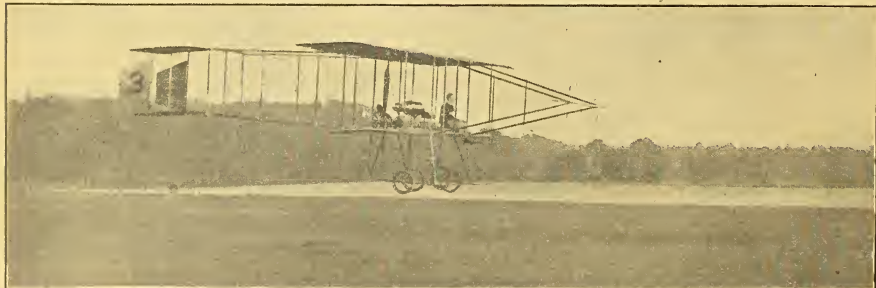
Lieutenant Chevreau remained aloft for four and a half hours, and he returned to headquarters with elaborate details of the disposition of the enemy's forces. After descending in an open field, he jumped on a horse and galloped to the general with his report. Sapper Lorian, another civilian, who flew practically all day with a passenger, returned three times to headquarters with valuable information. At the close of the day's work the aviators were warmly congratulated by General Bonneau, in charge of the operations.

The French Budget includes a vote of £680,000 for the development of military aviation.

#### Indian Regulations.

Mr. J. L. Jenkins, introducing into the Viceroy's Council the Government Bill controlling the manufacture, sale, importation, and possession of airships by a system of licences, explained that the details of the provisions of the Bill had been largely borrowed from the Indian Arms Act and from the Act recently passed in England on the occasion of the Coronation of King George.

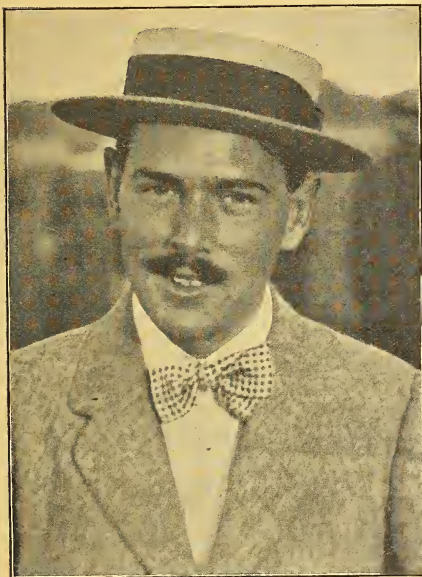
Mr. Jenkins defended the action of the Government, and maintained that precaution was necessary for military purposes. The AEROPLANE has private information that this Bill has a double purpose. Not only is it intended to guard against the possibility of discontented native States equipping themselves with air battalions, but it is intended to prevent



An Army Aviator.—Mr. Snowden-Smith of the A.S.C. making one of his usual perfect landings on the Blondeau biplane.



innocent native capitalists from being swindled by European sharpers who endeavour to sell them machines which cannot possibly fly properly, and are not only useless but probably dangerous. Several such cases have already occurred.



**BACK AGAIN.**—Lieut. H. M. Maitland, now almost recovered from his accident, snapped at Brooklands. Over the initials H.M.M., he has, during his long illness, given much joy to the readers of "The Aeroplane."

#### Italian Notes.

As a compliment to the *Petit Journal*, which organised the Paris-Rome, a Bologna paper is getting up an open-to-all three days' cross-country from that city to Venice and Rimini and back. As the local Aero Clubs are already well started, all that district should be shortly permeated with keenness. Among the proselytes is Dorando Pietri, of Marathon fame.

Manisero will, unfortunately, be out of this cross-country flight, nor will he probably be able to take part in the projected Milan-Turin event, for Italians only, owing to a fall when doing a circus performance over the heads of the public at Rimini last week.

Now that the military manoeuvres are over, a sense of pleasant wonder comes to those who have followed the doings of the air fleet. Quite a lot of flying was done by the heavier than air brigade, and no damage of any importance occurred to pilots or machines in spite of storms and bad landing surface, while as for the dirigibles P1 and P2—the capital signifies "little," bigger vessels are to be built later—these have done magnificently. Both journeyed long distances to and from the seat of war without any difficulty.

Their success as instruments of war cannot, of course, be known, but as vehicles the authorities consider them safe enough for the King himself to enjoy a longish trip, during which I hear he experimented with aerial photography, in which he is very interested.—(T. S. HARVEY.)

#### England's Youngest Aviator.

The youngest certificated aviator in England is Naval Cadet R. F. Wheeler, 15 years of age, who took his certificate at the Bristol Salisbury Plain School on Saturday last. Some time ago Mr. Wheeler decided to learn to fly, and joined the Bristol school on August 8th, his tuition thus lasting four weeks, a short enough time in which to get a real knowledge

of flying. His progress throughout was exceedingly good, and his first solo flight was made five days before he gained his brevet. There are still a large number of Navy and Army officers under tuition at the Bristol school, which has already turned out a number of officer aviators.

#### Mr. Willows at Work.

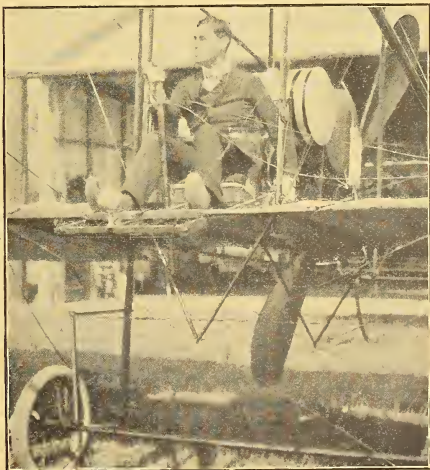
Writing on Monday, Mr. E. T. Willows says:—"On Thursday of last week we had a very successful show from the roof of Heath's Garage, just alongside the New Street Station. We filled in the course of the early morning two balloons, a 50,000 and 15,000 cu. ft., the latest products of our factory, and in the dinner hour the two balloons sailed away, causing a tremendous sensation in the main streets of Birmingham. In the 'fifty' were four and a youth, my man taking away the other one. We had a successful trip as far as Leicester, and, curiously enough, passed right over the Castle Bromwich grounds, which enabled me to take my bearings in the 'right place' for future work. The work of the new envelope for the 'City' is going on well, and she will be out before the small dirigible, which is still building. Please make it known that in the coming German invasion it is advisable for anyone of note (including those connected with aviation in this country) who wishes to leave the country within the next two or three years to make for Birmingham, as we shall be able to send them away from the centre of the city by balloon quite safely."

#### A Varnish for Aeroplane Fabrics and Rubber.

A note recently appeared in *THE AEROPLANE* noting the need of a really satisfactory fabric varnish. It is, therefore, of interest to learn that a new varnish will shortly be placed on the market by an English company under the name of "Cellon." This solution is the discovery of Dr. Eichengrün, of Berlin, whose researches in chemistry are well known, particularly in regard to non-inflammable celluloid, which forms the base of this varnish. "Cellon" can be applied either after the aeroplane is constructed or the fabric can be first treated and surfaced with it by passing through rollers. It is claimed that the effect on the fabric is to render it air and water proof, and to make it impervious to the rotting effect of the oil from the engine, and also to tighten the fabric so that it cannot afterwards sag. The varnish is intended not only to form a film, and so reduce skin friction, but also to permeate the fabric and make it entirely waterproof.

The solutions can be made in various strengths up to 50 per cent., which is not known with any other proofing agent, and a thick coating can be put with rollers in one application.

Cellonised fabrics have important points in common with



Lieut. Gregory, R.N., on a Short Naval Biplane.



rubber-proofed cloths, viz., that by treating the "Cellon" surfaces with a solvent they can be joined as easily and as firmly as rubber solution joins rubberised fabrics, and also the "Cellon" surface is quite uncrackable and the fabric remains very flexible.

For general uses the "Cellon" solution is made up in transparent form, although it can also be made up in any colour without its properties being affected. It has been submitted to experts, who have expressed the opinion that it is the best yet devised. The company will also place upon the market a varnish which sticks to rubbered fabric with great tenacity, and protects it against the action of deleterious agents, and renders it impervious to the effects of humidity and extremes of atmospheric temperature, and also prevents sagging. Readers who wish to know more about "Cellon" can be put in touch with the makers by writing "Ajawb," c/o THE AEROPLANE.

#### Clarke, of Kingston.

Mr. T. W. K. Clarke has the proud distinction of having been the first to set up a commercial aeroplane workshop, which he did as far back as 1906. He has never produced a machine of his own design, his reason being that he does not think the science far enough advanced for the standardisation of types, and he does not care to start building until there is some chance of designing a machine which will not be out-of-date in a few weeks. He has always, instead, made a speciality of building machines to his clients' own designs, with the result that his accumulated experience, together with his natural ability, have given him a knowledge of aviation excelled by few.

The majority of machines built by him are built, more or less, under conditions of secrecy, which is bound to detract somewhat from the interest of a description of his shops; nevertheless, there is much of interest of which I am at liberty to speak.

The first full-sized machine which I was privileged to examine was distinctly original. It is a tandem triplane, with a front elevator and biplane tail—making nine planes in all. The machine is mounted on four wheels, and the control consists of a lever and two steering-wheels mounted concentrically. The lower and larger steering-wheel works a biplane rudder and the two front wheels; the upper and smaller wheel works the front elevator—turning left to elevate, right to depress. In each of the two gaps of the rear triplane is a rudder, and the two are worked in opposition by the lever, which is moved right and left. The machine is built in Mr. Clarke's usual beautiful fashion, but has not yet flown.

The other shops held greater interest to a practical student of aviation. Mr. Clarke's method of propeller design is well known as being exceptionally sound, and his mode of building is a joy to examine: a particularly beautiful example of propeller work was a 13 ft. propeller of 15 ft. pitch, designed to absorb 60 h.p. at 450 revs. for driltable work.

An interesting example of the use of wood and metal together is the Clarke running wheel, which is just beginning to be appreciated. As is probably known, it has a steel hub with gun-metal bushings, heavy gauge steel spokes, and a wide flat rim built up out of hickory and covered with a thick leather tyre.

Mr. Clarke is also filling a long-felt want with his welded steel sockets. Constructors, as a rule, realise that aluminium

is an unsatisfactory material for sockets (or anything else), and brazed-up sockets are not really reliable. But acetylene-welded work, when really well done, is somewhere near being as strong as the original material. In the particular case of sockets there is the additional point that whereas special aluminium lugs must have special patterns made for them, steel sockets may be welded up either in hundreds alike or one by one and all different.

Mr. Clarke also devotes much care to the manufacture of hollow spars of stream-line section, which, though expensive, are beautifully light and stiff. His made-up planes are also very nice. Ordinary accessories, of course, figure in the stock list; but these do not call for comment, as do the special articles I have enumerated.—P.K.T.

#### An Acknowledgment.

For the two photographs which recently appeared of Mr. Grahame-White, THE AEROPLANE is indebted to Mr. Bernard Isaac, of the Aeroplane Supply Co., Ltd., the photographs having been taken by Mr. Keig, of Douglas.

#### Liverpool Model Aero Club.

The second competition for the Harrison prize was held on Saturday, there being still three more days, the 16th, 23rd, and 30th inst. On Friday, the 15th inst., there will be a general meeting at 39, Brook Road, Bootle, at 7.30 p.m., and on Friday, the 22nd, a committee meeting. Proposals for the winter season will be put forward at the general meeting.—ALEX GRINDROD PUGH.

#### Scottish Aeronautical Society M.Ae.C.

Annual general meeting was held on 7th inst. Mr. George P. Currie in chair. Chairman made reference to vast development in aviation during past year, and to increased interest taken by the public, which was no doubt greatly due to untiring efforts of model flyers. Following officers were elected for ensuing year: President, Mr. H. Lewis; vice-President, Mr. George Riddich; secretary and treasurer, Mr. William Foster, Rochelle, Limeside Avenue, Rutherglen, Glasgow; assistant secretary, Mr. J. S. Gordon. The Scottish Aviation Company have very kindly offered their flying ground at Barrhead for use of model flyers. A kite-flying contest will be held shortly, also a model flying meeting. Full particulars to be had from the secretary. It is hoped that the glider will be ready within the next month or so.

#### The Birmingham Aero Club.

The model championship of the Midlands (1911) will be flown at Billesley Farm, Yardley Wood Road, King's Heath, on Saturday, September 30th. Two gold-centre silver medals have been presented to the club for senior and junior championship. In view of sensational records lately reported, competitors possessing models that fly more than a mile are requested not to wind up to the full, as ground outside this distance is not favourable to their recovery. Time made will be carefully clocked, but the great advance in model flying will stamp the winning of this event as a great performance. Four models already entered. No restrictions as to weight, size, design, or propulsion (provided that means of propulsion are supported by model). R. Cobham and F. A. Thompson, joint hon. secs., 62, Albion Street, Birmingham.



Some of Short Bros. testing plant, for struts, spars, &c., showing the care with which their material is selected

## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

## Aero Nuisances.

Sir,—Some few weeks back an article appeared in THE AEROPLANE about certain complaints from the inhabitants of Weybridge concerning flights made from Brooklands in the early morning. They say it is impossible to get any sleep at all when these flights are in progress, and I have now heard the same complaint from a friend who is a captain in the Territorial forces. He has lately been in camp with his regiment on "The Plain," in close proximity to the Bristol School, and he says that as flying was forbidden between the hours of 9 a.m. and 5 p.m., both pupils and instructors were forced to content themselves with the hours just after sunrise and before sunset. Consequently, when the ceaseless roar of many engines (as many as six were sometimes going continuously) was heard over their heads at 4 a.m. sleep was thenceforth banished for the remainder of the night, and thus the gallant men who voluntarily put themselves into training for the defence of their country were deprived of several hours of their well-earned rest.

Now even the most enthusiastic lover of aviation must admit that these complaints are but just and fair, for as Mr. Turner points out in his article on the Brooklands nuisance, however soothing the open exhaust of an aeroplane engine may be to the pilot, it must be anything but soothing to the average British citizen sleeping, or, rather, trying to sleep, quietly in his bed. Moreover, these two complaints may quite well be followed by others, unless our aviators become more considerate in this respect. For instance, the early "risers" at Hendon might do well to remember that there is a hospital close by, where quiet is essential.

This nuisance can, however, be remedied by the aviators themselves with little or no sacrifice to their work or pleasure. I would not suggest anything so drastic as the forbidding of flying altogether at such hours, for the weather is then at its best for flying; it would be quite sufficient if the aviator were to choose his direction carefully when flying at this time, so as not to fly over or near any dwellings, and, if such are unavoidable, to fly over them at an altitude of not much less than 1,000 ft. At such a height no engine would be unpleasantly loud to the earth-dweller, and the pilot would even be safer, as it is well known that the air at that height is quieter than on the surface of the earth.

In conclusion, I would add that it is such acts as these which bring any sport into disrepute. Some of the early motorists brought on themselves the epithet "road-hogs," and the sport of motoring is now only just recovering from the stigma which this term gave to the class. It is greatly to be hoped that there will be no need for the coining of the word "air-hog." The recklessness of a few may bring aviation into public disgrace, and, therefore, would it not be better for all aviators who wish for the welfare of their business and sport to avoid giving offence to the world at large by such acts?

ARNOLD E. BUTTON.

## British Engines Again.

Sir,—I thank you for your footnote to the matter appearing in your issue for last week, and to a certain extent agree with what you say. The statement referred to was, no doubt, stretching the point a little, but when I wrote I was looking at the matter from the point of view of the Englishman who has decided to purchase an aeroplane, but finds that there is not a reliable British engine on the market, and, in consequence does the next best thing, and purchases the foreign motor with the best reputation.

Several of the engines you mention hold a high place in my estimation, but although the various records set up by them show fairly conclusively that these particular motors can be relied upon to do good work under certain conditions, their performances, to my mind, cannot be considered as placing them in a position of preference and superiority over the Gnome. Take the European Circuit. Certainly some of the pilots of Gnome-driven machines changed their engines rather often during the race, but then these men were out, for the most part, to prove the value of the particular make of aeroplane they flew, and so long as they completed the Circuit in good time and to the satisfaction of the makers, they were content and willing to change their engine every day if the one fitted showed signs of not working up to pitch.

Since it often happened that there was little or nothing the matter with the engine, and that it was only changed at the whim of the pilot, who, metaphorically speaking, discarded it because its note did not agree with that of his tuning-fork, the performances of the Gnome during this Circuit cannot, surely, be taken as solely demonstrative of its capabilities.

A direct answer to such a question is Beaumont's and Védries victories in the *Daily Mail* Circuit of Britain. Either of these performances absolutely puts in the shade that of the R.E.P. in the Circuit of Europe, although, let me add, I believe the R.E.P. to be capable of far greater things, and consider it in every way a credit to its designer, M. Robert Esnault-Pelterie. It appears that once the Gnome is properly tuned up it will run usually with greater reliability than other engines having stationary cylinders, owing to the momentum of its rotary cylinders tending to carry them over temporary misfires, etc., when other engines would cease work.



Lieut. Gerrard, R.M.L.L., and Lieuts. Gregory and Longmore, R.N., with the various pets of the Naval Mess at Eastchurch. The black kittens are known as "34" and "38," the numbers of the Short machines lent to the Navy. They are distinguished from one another by the fact that 38's engine being better than 34's the one which purrs loudest must be "38."



In mentioning that in the International Michelin Cup Contest last year a Renault won and a R.E.P. was second, you do not take into account the fact that, as far as engines were concerned, the Gnome fitted to Henry Farman's machine was the victor, having kept its aeroplane in the air considerably longer than did either the Renault or the R.E.P.

Beyond this, if there was anything in the way of excessive work on any side it was with the Gnome, which had by far the heaviest machine to propel, the differences in the speeds being due solely to the inequality of the supporting surfaces, angles of incidence, cambers, etc.; in fact, the general lines of the aeroplanes themselves, and not to the motors, which, in each case, performed the maximum of work required.

Had the Renault or R.E.P. machines carried a sufficient quantity of fuel, it is quite within the realms of possibility that either or both would have beaten the Gnome. However, that cuts both ways, and it is my sole intention in arguing thus to prove that the Gnome has earned its good reputation by hard and persistent work, and to emphasize the fact that had it not been for its advent at a time when aviation was almost at a standstill for want of a reliable engine, aviation generally would not be in the advanced stage it is in to-day.

I am, of course, aware of the performances of the French officers at Buc with R.E.P. and Renault driven machines, but these performances do not in any way put in the shade those that the Gnome is daily putting up all over the world.

I agree that under certain conditions and at certain times the rotary Gnome has been beaten by engines having stationary cylinders and built on more orthodox lines, but here again it cuts both ways, these same engines having been beaten time after time by the Gnome. It is understood that if one wants an engine to run well it is necessary to pay it a fair amount of attention, irrespective of its design or make. Naturally, some motors require more attention than others, but taking the better-class engines on the whole, I am of the opinion that there is little to choose between any of them in this way.

The real objections against the Gnome are that it wastes lubricating oil extensively, "eats" petrol, and has a tendency to make a machine unstable on corners owing to the change of direction calling into operation the gyroscopic force stored up in the revolving cylinders, a left turn [on a tractor screw monoplane.—Ed.] tending to throw head of machine up and a right turn tending to throw it down, and this, I believe, was the sole cause of Moisant's death, as also the deaths of several others, although Mr. Charles C. Turner recently stated that in making the right-hand turns necessary to qualify for his pilot's certificate he had no trouble whatever, and, personally, I have seen Grahame-White perform some most remarkable right-hand turns on the "Baby."

On considering this matter I have come to the conclusion that, first, Mr. Turner found no difficulty because, as a learner, he probably took his corners slowly; secondly, Mr. Grahame-White is able to perform such marvellous right-hand turns owing to the large amount of experience he has had, which, I suppose, has taught him to instinctively allow for the tendency of the engine to pull the head of machine down by at the same time dropping the tail on this biplane the engine would throw the tail down.—Ed.] and, thirdly, the real danger exists but only in the case of novices executing manoeuvres with fast flyers.

As to no one copying Farman's idea of placing the pilot's seat some distance in front of the main planes, I can only put this down to a lack of intelligence which has all along permeated the work of English builders of Farman type aeroplanes. Mr. Farman made this alteration in his racing machine simply that he might bring the centre of gravity nearer to the centre of pressure of main planes, thus taking most of the weight off the tail, the whole idea being to make the machine (a fast one of its type) quick on controls. The fact that the pilot is the first thing to hit anything in the case of an accident or vertical dive is just as evident in the older type of front elevatorless machines as in the new.

Anyhow, though this new type is, like the old one, for practical purposes nothing more nor less than a crude arrangement of sticks and canvas, termed by courtesy an aeroplane, it is, nevertheless, to use your own words, a natural development consequent on an increase of knowledge. I am aware that Voisin copied Chanute, that Farman copied Voisin, and so on. The particular point I wish to emphasize is that Chanute worked on lines which were fundamentally wrong when embodied in the design of motor-driven aeroplanes, and that, in consequence, Voisin, Henry Farman, Sommer, Maurice Farman, and the rest of designers who have sought to develop this type, have all along been working on lines which are radically and obviously incorrect.

The British and Colonial Aeroplane Company, Ltd., is to be congratulated on having produced a well-designed machine. I await developments with interest.

Since you mention Mr. Barber's name, I should like to put the following question: Why, in view of the fact that the framework of an aeroplane is naturally frail, and that in consequence of a bad landing the engine would almost certainly tear itself out of its bed, does Mr. Barber place his engine immediately behind the pilot, when in this type it seems a comparatively easy matter to alter the design and place the engine in front of the pilot?

Although Mr. Barber's machine does not conform with my ideas of aero-design, it is, nevertheless, a remarkably fine flyer, and when Mr. Barber makes the alterations necessary for the safety of the pilot, his machine should quickly become popular.

ERNEST WARDE-FOX.

[As to the Chanute type, the "front-elevator, engine-behind" machine, the development along the wrong road. The true line of development was along that reached by the Avro, Goupy, Bréguet, Jezi, and French Wright, *via* the Roe and Vaniman triplanes, for Chanute had no front elevator and no lift on his tail. The monoplanes are all derived from the Henson, Wenham, and Striniflow models, *via* the Lilienthal and Pilcher gliders.—Ed., THE AEROPLANE.]

### The N.E.C. in Particular.

Sir,—When I wrote the letter "Those Engines," published in your issue for August 31, I naturally took a review of the various makes of English engines before passing drastic criticism on them and bestowing such unstinted praise as I did on a foreign make of motor.

The N.E.C. has always provoked my greatest admiration, but the N.E.C. Company must really understand that actual performances mean everything, and that because Mr. Ogilvie has used their engine with a fair amount of success there is no reason why aviators generally should accept the N.E.C. as being the world's best aviation engine.

It is much to be regretted that the N.E.C. is not more extensively used, but the facts have to be admitted and met, and, to my mind, the only way the proprietors can "force the market" is by building a machine themselves, fitting their engine, and proving its worth by long and continued cross-country and aerodrome flights; by making and breaking the world's records in the same way that the Gnome is doing day by day; and by generally proving in every possible manner their assertion that the N.E.C. is the first and foremost engine of the times.

I have long been awaiting such a movement on their part, and no doubt it will come, and we shall have the N.E.C. aeroplane as to-day we have the well-known and popular N.E.C. motor-car. No doubt the company is waiting until the standard of aeroplane design can be fixed with a greater amount of certainty, not being willing to start trials with an experimental machine. I think, however, if they consider the matter they will find the time ripe at the present moment, and that further delay will probably find them unprepared for the sudden jump of aviation into popularity which we may expect in the immediate future.

There are now plenty of designers capable of drawing up working plans of a reliable type of machine, which should not be expensive if built by the firm themselves, and as to a pilot—well, pilots are cheap enough!

Otherwise, unless Mr. Ogilvie takes it into his head to do something really great and convince us against ourselves, I am afraid the general run of aeronautical engineers will continue to look upon the N.E.C. as being too big a proposition to tackle. As it was with the Gnome at the beginning, so it is with the N.E.C.

Were Mr. Ogilvie, like Paulhan, a poor man, suddenly confronted with the possibility of making a fortune rapidly, I have no doubt that he would, by now, be world famous, and incidentally have made the name of the N.E.C., as Paulhan made the name of the Gnome. As it is, Mr. Ogilvie prefers to go steadily plodding along, and for that he is not to be blamed.

Let the N.E.C. Company now make a move, and they will find that aviators and engineers are open to be convinced, by practical demonstration, of the efficiency of their engine.

ERNEST WARDE-FOX.

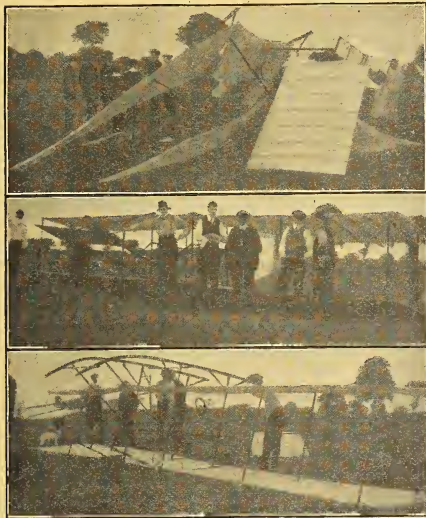
### Exit Birmingham Aero Club Glider "Haddon I."

Sir,—During the last fortnight we have had any amount of excitement with the glider. On Saturday, August 12th, we tried a towed flight without a passenger, and got it up 20 ft.



without any exertion, but damaged the rudder somewhat in landing. The next day there was a big wind blowing, and while we were preparing for another towed flight the glider was taken up of its own accord, turned over, and then came down at our backs, after having passed over our heads. A photograph is enclosed showing the glider in this position. The damage done was slight, and was soon repaired.

The wind then dropped to a dead calm, after a heavy shower of rain. We then tried the glider down the rail, but no great success was obtained. The glider was a second time taken up while we were busy elsewhere, the wind rising from a dead calm to almost a gale in a few seconds. This time there was more damage done than could be then repaired.



The Birmingham Club glider shown in its last stage at the top; in the middle, as it was before the accident; and below, during a previous experience.

The glider was not out again till Saturday, August 26th. On that day there was a very big wind blowing, quite an average of 30 miles an hour. At 4.30 we attempted the first glide with myself in the seat, and had quite a nice towed flight of about 20 yards at a height of four or five feet. Mr. R. Cobham, the secretary, then attempted a glide, but as the wind had dropped somewhat he could only just skim the ground.

We then decided to try it down the hill, with Mr. P. Oliver in the seat. The towing was no sooner started when Mr. Oliver started to make a series of hops each about 40 feet in length, and rising to a height of six or seven feet each time. After about 60 yards had been covered in this manner, Mr. Oliver got tired of this and went in for altitude, rising to a height of 40 feet in a second or two, and could go no higher because he was at the full length of the ropes. During its upward rush the glider lifted the persons who had a rope attached to the end of the plane off their feet, and caused them to let go.

Mr. Oliver kept the glider at that height on a fairly level keel for several yards, when suddenly the right-hand side was lifted by a gust. A dive and side-slip combined was then started, and it was noticed at the same time that Mr. Oliver had lost his foot-rest. With a crash which was heard on the farm half a mile away the left wing struck the ground and doubled up. The right-hand side rose again and folded up on top of the left side, tipping Mr. Oliver out of the seat and hiding him from view. The glider settled down into the position shown in the enclosed photographs. After about five minutes' work we managed to extricate Mr. Oliver from the wreck, and he was found to have suffered only a few scratches.

When describing his experience, Mr. Oliver said it just seemed as if the earth was dropping away from him, and when coming down as if it was coming up to hit him. During the afternoon there was seen some splendid model flying, the best flights being made by Mr. Trykle (53 secs.), Mr. Mason (45 secs.), and Mr. Hill (35 secs.).

We have not yet decided what to do, but shall most likely build another glider, using up some of the wreckage.  
G. HADDON WOOD.

#### Explanations Needed.

Sir,—Screws with slight slip involve a large waste of power.

A fair amount of slip is a proof of efficient power.

Rotary compression engines cannot be constructed with vanes or the like.

The gyroscopic effects of rotary cylinder engines carry greater risks than the use of ordinary lightly designed car engines.

The safety or stability of aeroplanes cannot be so good with weight, pressure, and thrust coinciding as with weights low and the thrust or pull placed between the pressure of carrying surfaces and such weight, otherwise giving a safe meta-centre.

Biplanes can never be so airworthy as monoplanes, because of their double surfaces interfering in eddies, turns, or any slackening movement in or due to the medium by which they are sustained.

I hope to send sketches of an improved machine and landing chassis shortly.  
Sunderland.

A. N. ENGINEER.

[Can anyone explain what this gentleman means?—Ed.]

#### The Visitors' List.

Mr. Gordon England, up from Bristol for week-end, called to talk over machines. Rather surprised to find new Astra-Wright, illustrated last week, has a strong resemblance to the biplane he designed just before the "Circuit." He hopes to have this particular machine out in two or three weeks, so it is only fair to make known the fact that it was all on paper long before the Astra-Wright appeared. The machine should be very popular and efficient, for it has a geared-down tractor and a side-by-side two-seater body. He promises something really new in landing chassis. Not only is he a fine flyer, but he is an excellent mechanic as well, so, with the fine Bristol workmanship, something really good should result.

Captain Bertram Dickson, steadily improving after his smash of about a year ago, came in on his way through town. He is looking quite like himself again, though he still moves rather stiffly. One day last week, just by way of seeing whether his nerve or head had suffered, he went for his first flight since his accident, going up as passenger with Howard Pixton on one of the Bristol school machines on Salisbury Plain. He was very pleased with his flight, and has now greater confidence than ever in Pixton as a pilot. He says he scarcely feels strong enough to control a machine for a long flight, but he certainly hopes to do a little trial flying by himself, now he knows how he feels in the air.

Mr. Conway Jenkins announced that he had made arrangements with Mr. Roe to go on flying the new Avro machines, and he has his eye on the all-British prizes which are at present on offer. The new Avros, as already noted, promise well, and Mr. Jenkins is very much in earnest in his intention to distinguish himself before long, so a good deal will probably be heard of him and the Avro machine in the near future.

Lieut. Harford, R.A., who has been making good progress at Brooklands, came in to discuss the purchase of sundry machines on which he has his eye, and should the deal go through he is likely to come to the fore as the owner of something particularly interesting.

Mr. Lang, just returned from Cornwall, came in to discuss propellers as usual. He has just joined the staff of the Bristol Co., and hopes to be doing some interesting experiments with propellers.

Mr. R. F. McFie, more optimistic than ever, drew attention to Mr. Buist's article in the *Morning Post*, to which reference is made in the Editorial Opinions of this issue. Mr. McFie is now of the opinion that the aeroplane industry holds out great possibilities for enterprising young men.

Mr. Bell reported excellent progress of the Deperdussin school at Brooklands, where a new two-seater is expected during the week. Captain Hamilton, having been to Reims, has decided to return to the Brooklands school, and to tune up his





**MISCELLANEOUS ADVERTISEMENTS**

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate — 18 words 1/6; Situations Wanted ONLY — 18 words 1/-. 1d. per word alter.

**PATENTS.**

**AERO PATENTS.** Inventors advised by first-class aero experts and taught flying, their inventions secured, manufactured and tried in the firm's own works, flying grounds and aeroplanes. Book of Instructions post free on mentioning this paper. W. P. THOMPSON & Co., Chartered Patent Agents and Aero Experts, 6, Lord St., Liverpool, and at London, Bradford, Birkenhead and Freshfield.

**MACHINES.**

**FOR SALE,** new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**BLERIOT** cross-Channel type Monoplane for sale, cheap. Offers to Sheffield-Simplex Motor Works, Ltd., Tinsley, Sheffield.

**MACHINES.**—"Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**FOR SALE** without reserve—45 H.P. Monoplane, new and tested, will sacrifice fair offer, cost £900. Also 40-50 H.P. Jap 8-cylinder engine and propeller, etc. Apply Box 333, THE AEROPLANE.

**MILITARY** type Farman, Gnome Engine, cases and spares for sale, price £650. Instalments accepted from responsible purchaser. Apply Box 334, THE AEROPLANE.

**ENGINES.**

**FOR SALE.** Genuine Antoinette engine, complete, in thorough working order. Also Humber 3-cylinder aero engine. Manager, Portholm, Huntingdon.

**AEROPLANE ENGINES.** Several good second-hand for sale with 2, 3, 4, and 6 cylinders; Also one 8-cylinder Antoinette 4 inch bore—bargains. Patmo's Motors, Ltd., 45, Broadway, Walham Green, W. Telephone: 277 Western.

**50-60** H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—THE AEROPLANE.

**PROPELLERS.**

**PROPELLERS.**—"Avro" Propellers of proven efficiency—340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS**

hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn

**TUITION.**

**TUITION,** with or without limited liability, Blériot XI.; personal instruction.—CHANTER, Aerodrome, Hendon.

**TUITION.**—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. More certificates have been secured on the AVRO than on any other "All-British" Aeroplane. —A. V. ROE & Co., Brownsfield Mills, Manchester.

**TUITION—Continued.**

**LANARK AERODROME, N.B.** Tuition for R.A.E.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

**BARREHEAD FLYING SCHOOL.** Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTCH AVIATION CO., 185, Hope Street, Glasgow, or Barrehead.

**INVESTMENT.**

**AERONAUTICAL** Business for Sale, established three years, including two full-sized biplanes that have flown (British designed, patented) and patents for Control Lever, Automatic Stability, Brake, Disappearing Wheels. Well equipped works and flying grounds. Price £3,000 part cash.—MALLOWS & Co., Adelphi House, Strand, London, W.C.

**GOOD** Business in Models and Aeroplane Parts for Sale, in Midland town. Excellent connection. Owner moving to London. Replies to Box 326. THE AEROPLANE.

**MISCELLANEOUS.**

**PLANES, LIMITED,** Duke St., Birkenhead —Monoplanes guaranteed to take purchaser as passenger 30 miles flight before delivery. 60 H.P. Green engine, 50 H.P. Isaacson, 30 H.P. Anzani, and 120 H.P. Delahaye on stock for aeroplanes and motor boats. Purchasers taught flying by Aero Club pilot. Hangars to let.

**HANGARS** TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**SECOND-HAND BAND-SAW,** splendid condition, Tilting Table, Fences, etc., for hand or power. £5.—MALLOWS & Co., Adelphi House, Strand, W.C.

**"MANN" MONOPLANE.** Imitation is the most sincere flattery, that's why the "Mann" Monoplane is so universally copied. Are you a pilot, and do you feel bored when the wind blows? Why not buy a "Mann" Monoplane and amuse yourself by locating and naming all the remous in the aerodrome? Any ground half-a-mile each way is AT PRESENT big enough for a "Mann" Monoplane. 15/- post free. Parts for constructing, 5/-. Orders executed in strict rotation by WILLIS BROS., 14, Wellington Square, Hastings.

**ETRANGERS,** qui aiment la langue française et l'aviation abonnez-vous à

**LA FEUILLE SPORTIVE**

2 fr. par an, France; 3 fr. par an, Etranger. Directeur: M. Gache, Professeur du Lycée Carnot, 5, Rue Salneuve, Paris.

**PHOTOGRAPHS:**—Original photographs of most of the illustrations in THE AEROPLANE can be supplied at short notice, half-plate size 1s., postcard size 6d., from THE AEROPLANE, 166, Piccadilly, W.

**POSTERS.**—To promoters of exhibition flights; aviators giving exhibitions on their own account; aerodrome proprietors, &c.:—Striking posters in large and small sizes can be supplied in a day or two by arrangement with THE AEROPLANE, 166, Piccadilly, W.

**A Huge Success. Sale & Exchange.**

**ANYTHING YOU WANT?** Anything you've got to sell send to us. We have bargains every week. Mention THE AEROPLANE and send for list of second-hand and new bargains. We make propellers, wood parts, and complete aeroplanes. Your designs or standard machines.—WESTON HURLIN CO., Enquiry Office, P. F. Building.—13, Milford Lane, Strand, W.C.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, SEPTEMBER 14th, 1911

No. 15

## "BRISTOL"

### Flying Schools

AT

SALISBURY PLAIN and BROOKLANDS

. . . POSSESS . . .

The Best Equipment

The Finest Instructors

AND

The BEST RECORD

:: IN THE COUNTRY ::

Pupils are taught, not merely to fly, but also how to assemble and adjust their machines and motors

RAPID AND THOROUGH TUITION IS ENSURED  
AND THERE IS NO WAITING FOR MACHINES.

SPECIAL TERMS TO NAVY AND ARMY OFFICERS.

Write for particulars to—

**The British & Colonial Aeroplane Co., Ltd.,**  
FILTON, near BRISTOL.

# THE AEROPLANE

Edited by CHAS. G. GREY, ("Aero-Amateur")

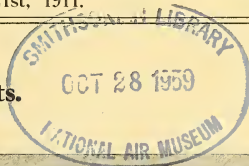


Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, SEPTEMBER 21st, 1911.

No. 16

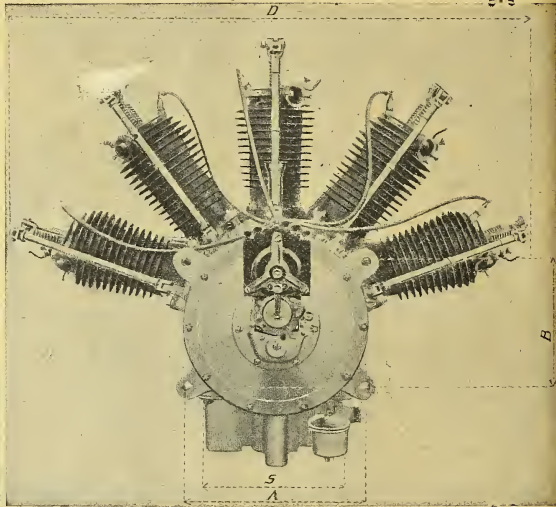
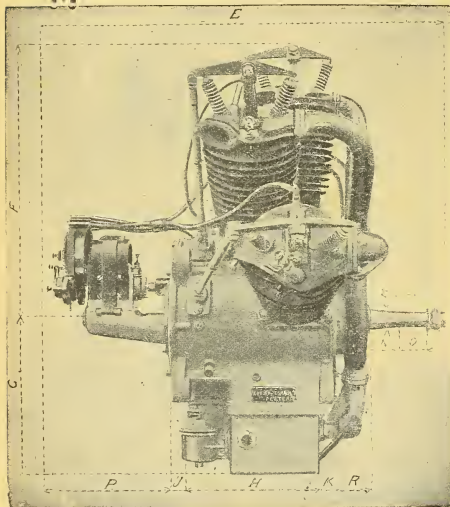
Some of our Pilots.



1. H. R. Fleming and 2. C. Collyns Pizey, both fine flyers of Bristols; 3. E. V. B. Fisher, formerly a Hanriot pilot, but now with Vickers, Ltd.; Captain W. D. Beattie, who took his certificate on the Avro; N. S. Percival, who pilots the Billing biplane; and H. A. Petre, also a Hanriot pilot.



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

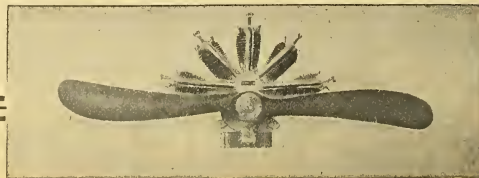
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"	
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL COMMENTS ... ..	363
AIR CURRENTS ... ..	368
THE AERIAL FARCE ... ..	369
WHY THE OLD TYPE OF BIPLANE IS UNSAFE	370

	PAGE
THE WEEK'S WORK... ..	372
THE R.E.P. BIPLANE ... ..	377
CORRESPONDENCE ... ..	378
THE VISITORS' LIST... ..	381

## Editorial Opinions.

**Experimental Machines.**

Quite a number of people are engaged in building experimental machines, and most of them will find themselves involved in the same trouble as that which beset the very first experimenters with aeroplanes. The trouble then was that nobody knew how to fly, and consequently every machine took months longer than it should have done before it got into the air properly, because no one knew whether its refusal to fly was the fault of the pilot or of the machine itself.

Even pilots of only moderate experience can tell almost at once whether the machine in which he may be rolling can be made to fly or not, and it does not take long for him to find out what is the matter with it if it will not fly. Very often its refusal to fly is due to some quite minor fault, such as the angle of incidence on the tail, or the fact that the propeller which happens to be fitted, although theoretically the correct pitch for the designed speed of the machine, does not, for one reason or another, actually fit the machine, and he could probably find out in a few days just exactly all the reasons which were preventing an otherwise quite promising machine from doing itself justice.

On the other hand, the builder of the machine, not being able himself to fly, might waste months and months before he could coax the machine off the ground at all. It, therefore, seems reasonable to suggest to inventors or constructors who are experimenting with new machines that it would pay them uncommonly well to make arrangements with some pilot of experience to come down and try their machine when it is ready for its tests. It might, perhaps, cost a £10 note to get a man to spend a week testing a machine, making suggestions for alterations, and generally tuning it up, but the chances are that some hundreds of pounds would be saved by doing so.

It must be remembered that the machine, apart from the engine, takes quite a good deal of tuning before it can be made to fly really satisfactorily, and, therefore, when possible it is well to obtain the assistance of a pilot who knows something about aeroplanes as well as about engines. There are many excellent flyers who know nothing about aeroplanes or engines; there are others who are quite good men on engines, but are not really clever at tuning up aeroplanes; and there are yet others who can make an aeroplane fly, if it is ever going to fly, so long as they have got someone else to tune up the engine for them; and it is, therefore, rather necessary for the inventor or experimenter to get hold of

a man who has the particular qualifications which he himself lacks.

The inventor who is himself an expert on engines only needs a pilot who is good on the aeroplane portion of his work. It is also true that quite a number of men who can fly, and who understand their aeroplanes thoroughly, would be better off if they could get a genuine engine tuner to put their motors in order; but, in any case, the man who owns an aeroplane and who has not done any flying himself certainly ought to obtain the temporary assistance of a man who can fly to make sure whether his machine is really any use or not.

If any readers of *THE AEROPLANE* who are experimenting with new type machines agree with these remarks, the writer will be very pleased to put them in communication with several qualified aviators who could, no doubt, arrange to do the necessary work at a comparatively low figure.

**Army Aeroplanes**

The French Army manoeuvres have already brought out one or two points about aeroplanes themselves which should be worthy of the consideration of the Air Battalion, apart altogether from the general lessons of the utility of the aeroplane, which one hopes will be duly laid to heart by all soldiers.

One of the troubles of the aerial scout is that he is much too easily seen and heard. At a matter of five or six thousand feet an aeroplane might quite easily pass unseen, but with existing engines it could not possibly pass unheard, and it will, therefore, be necessary to fit some sort of respectable silencers before long.

Early this year, when Captain Hinds-Howell, R.A., was experimenting with a Howard-Wright monoplane and a 35-h.p. E.N.V. engine at Brooklands, he fitted the engine with long exhaust pipes, which ran the full length of the wings, and opened about a foot behind the trailing edge. These pipes apparently made no difference to the power of the engine; in fact, they seemed rather to assist it, presumably by cooling the exhaust gases as they went along the pipes, in the manner which was proved to help some car engines which were tested in France some time ago. With these pipes fitted the machine was absolutely inaudible at a distance of 300 or 400 yards, which is about the height at which an aeroplane would fly on a dull or misty day.

The question of being seen also deserves careful consideration. Lieutenant Yence, in the French manoeuvres, flew with an observer over a certain

line of country, which line brought him right over the portable Bessonneau hangars used to shelter several Blériot machines belonging to the opposition army. The cloth used in these hangars is a darkish green, and when seen from above in the evening it so blended with the colour of the ground that both the pilot and his passenger passed over it at a height of about 600 ft. without seeing it. On the other hand, another officer who was out scouting returned with the report that he had seen in the enemy's country certain troops (duly specified) and an aeroplane, which had landed some distance away from the camp.

Now this seems to suggest that the cloth used for military aeroplanes should be a greenish-khaki colour, for in that case the machine would be practically invisible when on the ground, and viewed from above; and it is evidently quite as important that the enemy's scouts should remain ignorant of the number of aeroplanes possessed by their opponents as it is that they should be deceived as to the troops themselves, and it is, of course, very much harder to hide an aeroplane than it is to hide a number of troops, who can be hidden along a line of hedge.

Besides this, those who have attended aviation meetings will remember that quite often when an aviator has been up at 5,000 ft. or so, when once one has lost sight of him it is quite hard to pick him up again, and, therefore, it seems fair to assume that at 5,000 to 6,000 ft. a silent aeroplane might well pass unnoticed, even in quite clear, sunny weather. But the aviation meetings have also taught us that when a machine happens to turn so that the sunlight catches the surface of one of the white wings, the white stands out much more clearly against the blue sky than would the black silhouette of the machine itself. And one should also remember that at certain angles the polished surface of the propeller flashes like a heliograph.

It would, therefore, seem advisable to have a dull but, of course, smooth surface on the propeller, as well as having a khaki-coloured machine.

The colouring and the silencing of the machine are, of course, even more important in the case of big, slow, passenger-carrying machines than in the case of the high-speed machines, for even a 60-mile-an-hour passenger carrier would, of course, be absolutely at the mercy of a 90-mile-an-hour single seater armed with two or three hand grenades, and every army will naturally include a certain number of high-speed "destroyers," which will be let loose immediately a passenger-carrier is sighted.

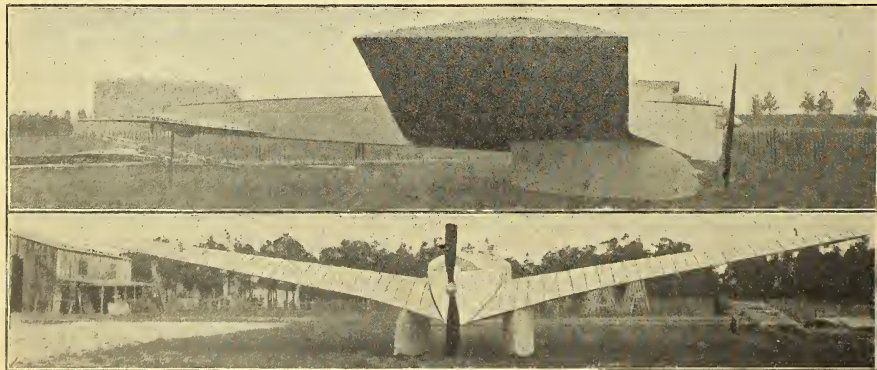
The time is now drawing near for the last flying day for the Manville Prize. . . .

This prize, it will be remembered, was given by Mr. Ernest Manville, the President of the Society of Motor Manufacturers and Traders, for the greatest total time spent in the air with a passenger on an all-British machine, and nine dates were fixed on which flights could be made for it.

Up to the present Mr. Howard Pixton leads, with a total of 187 marks, the only other competitor being Mr. S. F. Cody, with a total of 150 marks. The question now arises whether Mr. Cody is eligible for the prize, if he should fly further than Mr. Pixton on October 4th, or whether he was even eligible to fly on the last day on which he did fly, namely, August 7th.

The whole question turns on one of the competition rules, which reads:—*In order to qualify for the prize the competitor must have remained in continuous flight with his passenger for at least fifteen minutes on at least half the days on which any competitor shall have made a recorded flight in this competition.*

Now that may be interpreted to mean, first, that



The "Jupe-Culotte" in Aviation.—Two views of the new Antoinette, specially built for the French Army tests. Note the quaint "skirts" over the landing wheels. Each skirt covers four small wheels, acting at once as a landing skid and as a stream-line cover. There are also two tail wheels, making ten wheels in all. There are no wires to the wings, which are built on internal girders, and are apparently twisted bodily from inside. The span of the machine is 15.9 metres, and the surface 56 square meters. The over-all length is 11.5 metres. The chord is 4 metres tapering to 3 metres, and the cabin capacity is 1.5 metres by .8 metres. The pilot enters by a door underneath, and there is room for a mechanic to get round the engine, which is of 100 h.p. The body is fitted with glass panels all round, to allow a clear view in all directions. The "skirts" are 2.1 metres apart and 3.25 metres long. The weight of the machine is 850 kilograms empty, or 1,250 ready to fly, i.e., about one and a quarter tons.



# GREEN'S ALL BRITISH AERO ENGINES

are Reliable, Strong, Light and Highly Efficient.

Many Records have been made with these famous motors. They have been adopted by H.M. War Office, and a Green was the only British Engine to finish the £10,000 Circuit of Great Britain. It had all parts sealed and intact.

Average weight 4 lbs. per h.p. Two sizes, 30-35 h.p. and 50-60 h.p.  
Particulars on request.

**THE GREEN ENGINE CO.** (Sole Licensees under the Green's Motor Patents Syndicate, Ltd.) **55, Berners St., London, W.**

MAKERS FOR THE PATENTEES—THE ASTER ENGINEERING CO., LTD.

R.H.G.

## VALKYRIE MONOPLANES.

THREE TYPES.

40—80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES,

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

DELIVERY FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

**THE AERONAUTICAL SYNDICATE, LTD.,**

ESTABLISHED MARCH, 1909

**COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.**

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## HOWARD T. WRIGHT

110, HIGH STREET,  
MANCHESTER SQUARE, W.

Telephone  
8574 GERRARD.

Eight Types

### Monoplanes

From **40** to **80** miles per hour

### Biplanes

From **36** to **50** miles per hour.



Catalogue on Application,

Winner of De Forest Prize



the ultimate winner must have flown on at least half the days on which flights were recorded. Or it may mean, second, that he must have flown on at least half the days on which any other competitor has flown. As it stands, Pixton flew on May 6th, May 20th, June 24th, and July 15th; Cody flew on June 5th and August 7th. Assuming that both of them fly on October 4th, Pixton will have flown on five days and Cody will have flown on three, and flying will have taken place on seven days altogether.

Now under the first interpretation of the rule Cody would not be eligible, because he would only have flown on three days out of the seven on which flying took place; and Pixton would be eligible by having flown five days out of the seven.

If the rule be interpreted in the second way Cody will be eligible for the prize, because he will have flown on three dates and Pixton will have flown on five. But, again, if one interprets the rule in the first way there will be no need at all for Pixton to fly on October 4th, because he has already flown on four days, and if Cody flies on October 4th there will still be only seven days on which recorded flights have been made, and so Cody would be ineligible for the prize.

As a matter of fact, if the rule be interpreted in that sense, Cody's three flights on August 7th, which lasted altogether for  $61\frac{1}{2}$  minutes, and scored 70 marks in his favour, cannot count, as it was already impossible for him to qualify for the prize, owing to the fact that he had only flown on one previous day, whereas Pixton had flown on four. On the face of it, the first interpretation of the rule is unfair, because in order to put it into operation Cody's flights must be counted against himself.

The writer is under the impression that the committee of the Royal Aero Club, who will have the deciding of this point, are in favour of that first interpretation, and so it is to be hoped that the committee will recollect that the Manville competition is a sporting event, and not merely subject-matter for a lawyers' quibble. The legal profession is well represented on the Aero Club Committee, and, therefore, there may be a decided inclination to regard the rule strictly legally, and it is to be hoped that the sporting element of the committee will carry enough weight to decide in the other direction.

So far as the competitors themselves are concerned, they are treating the matter in a thoroughly sporting way, and the writer knows that if Pixton cannot win he would rather Cody had the prize than anyone else. Similarly, Cody would rather Pixton won it than anyone else, except himself, but he does want to have a sporting chance, and he thoroughly deserves it.

The absurdity of the rule, when interpreted in the sense to which certain members of the committee lean, is shown if one supposes that a dozen men had all been actually competing for the prize, and between them had flown on all nine days fixed for the competition, yet, owing to various strokes of bad luck, no individual one of them had flown on more than four days. In that case, though each man might have totalled, perhaps, a couple of thousand miles, yet no one would have been eligible for the prize, which would obviously be ludicrous.

Both Cody and Pixton have had extremely bad luck so far, for twice Cody has broken his propeller shaft (not his engine shaft) on the day of the competition. One day Pixton found himself without a machine to fly, and on another day his carburettor went wrong, and he could not keep his machine in the air for the necessary fifteen minutes.

If Cody's flights of August 7th count, as they should do, they will score 70 marks in his favour, and that leaves Cody with 150 marks and Pixton 187, so that October 4th should see a magnificent flight between the two for first place; but if the sport is to be run on legal points and not in a sporting spirit, the probability is that there will be no flying at all.

The writer is personally without prejudice in favour of either Cody or Pixton, both being good friends of his, and he only wishes both of them could win the prize, but he does say that Cody, as well as Pixton, is a sportsman, and should be given a sporting chance.

Cody got round the "Circuit of Britain" at his own expense, on an all-British machine, designed and built by himself, and, outside of his share of a few minor prizes, amounting to £100 odd, all he got at the finish was a cup of tea at the "Blue Bird," which he paid for himself, so, if ever a man deserved to win a handsome prize, that man is S. F. Cody. May he at least have a fair, straightforward chance of winning it on his merits.



Mr. Barber on the Gnôme Valkyrie doing a banked turn at Hendon. When handled by an experienced pilot, as may be seen, it is as safe to bank this type of machine as any other, and a great deal safer than some.

# AVIATION ACCESSORIES

Aneroids, from	-	-	-	-	£3	5	0
Do. with maximum hand	-	-	-	-	7	7	0
Do. combined with watch	-	-	-	-	3	10	0
Revolution Counters, aluminium-	-	-	-	-	6	6	0
Do. do. brass	-	-	-	-	5	5	0
Clift's Compasses	-	-	-	-	10	10	0
Safety Belts, from	-	-	-	-	1	5	0
Helmets, from	-	-	-	-	1	5	0

**The Universal Aviation Co.,**  
166, Piccadilly, W.

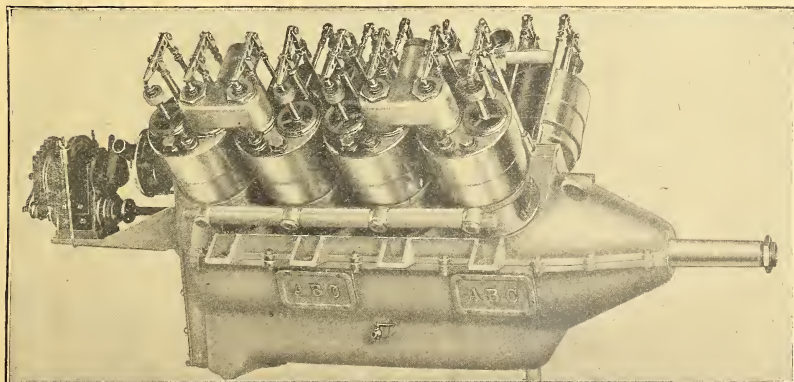
Telephone:  
3504 Mayfair.

Telegrams:  
"Birdling, London."

## A. B. C. AEROPLANE ENGINES

Manufactured by the All-British (Engine) Co., Ltd.

40-h.p. 4-Cyl. Vertical, £225; 80-h.p. 8-Cyl. "V" Type, £450.  
(Also a 120-h.p. 12-Cyl. "V" Type). Under 3 lbs. per B.H.P.



London Agents: The Universal Aviation Co., Ltd., 166, Piccadilly, W.

## AIR CURRENTS.

## Simonne's Postcard.

I sent Simonne a postcard by the new aerial route, and I could wish that I had not. In my enthusiasm for a great cause I said something about "winged words"; *ay de mi*, in the cold light in which we view unrecallable actions, I am not happy.

Simonne's ridicule is gentle but very searching, and I had a prescience of that which was to come. The matter was the more unfortunate because of the strange dilatoriness of the new post. I cravenly hoped that the card was lost.

Uneasily I sat watching Simonne as she sought to decipher the legend on the sun-dial, but the warm peace of the place enveloped me, and my thoughts brooded, not acutely, as I counted the honey-laden bees as they flew through the hot air, changing to spots of gold when they passed athwart the sun rays that pierced the cool gloom under the tree.

Simonne came towards me along the terrace of the Dutch garden where the sun-dial mused.

"I wish for a comfortable chair here; it is very soft under the tree, my friend *au front rêvant*, eh!"

I know better than to take advantage of the dainty lady's softer moments, and busied myself silently with a chair, hoping that all was well.

"I have receive a poste card from you this morning, *mon ami*!" said Simonne, as she settled in her chair.

"Oh! Ah! Yes, of course!"

"What a *bêtise*! We stop in the same house," and Simonne turned her head on the cushion and looked at me with very raised eyebrows.

I flinched under the calm gaze, and listened to the *Marseillaise* hummed in a minatory tone.

"I say, that's a fine air. You know, I don't think there's—" I began, without much hope.

"*Tout à fait*—but about the poste card?"

"Oh, yes—quite so—you see it's by aerial post. Thought it would be a memento and all that—"

"Ah! I see! The winged word, eh?" and Simonne laughed softly. I wriggled in my chair.

"What time did the *aéroplane* come? I did not see him arrive," she asked blandly.

"The aeroplane! Oh! Yes, quite so—of course—yes. I expect he was in a hurry; got a nail in his boot—I mean his

seat—hurting him or something, and he just dropped your card as he passed."

"*Tout juste*, and I suppose he drop it on to the others on my tray for breakfast; it is nice of him," and Simonne's tone was as guileless as that of a child.

"Of course, I don't know, you see. I—I think the ordinary postman brought it."

"Ah! The poor romance; poof! The winged words bring by the red hair poste man."

"Look here, dear lady, it is not fair to laugh at me; I thought you would like it, you know."

"So I do, very much—I think it very fine," said Simonne, musingly.

"I say! Do you know the fallen leaves have taken on the colour of your shoes," and I tried to look as little conscious as I could.

"*Tiens!* that is quite pretty for you, *mon ami*! *Mais l'ombre ne cache pas la tâche*. I—I return to the poste card. Tell me, when did you send it? I see you have at the head Friday—but that is to-morrow!"

"Oh, but it was last Friday," I blurted out, incautiously.

"Last Friday! *Bon Dieu*—how far did it come, eh?"

"Oh, from London; but, you see, it had to go round about, of course, to Hendon before it came here to Windsor—not easy, you know; and I see one of the fellows got lost and had to get his letters taken on by a bike." I strove to convey the difficulties by my tone, but unsuccessfully.

"So that is the aerial poste." And Simonne hummed a little air that was like a white butterfly in the sun.

"Oh, well, you see," I broke in, uncomfortably, "the weather was shocking when they started the show, and they had to take over a handful whenever they could. You must blame the weather. You see, they had millions of letters; people used to go all the way to Hendon to write them, and whenever it was fine the 'post-airmen' popped over with a bagful; they had to be jolly nippy, jolly hard work, you know. The pile of letters kept growing the whole time."

"Ah! So! And the poor winged word take a week to come from London to Windsor. I fear they were not *très gollant, mon chevalier*. Go fetch me my book in the house," and I went forth humbly from the fragrant shade into the harsh sunlight. "*Un esclave est moins celui qu'on vend que celui qui se donne.*" E. G.

## Our "Agony" Column.

RUFERT TURNHAME-GREENE (last heard of in more or less United State) is implored to return to his inconsolable friends in this country. All will be forgiven. U.S. papers please copy.

ANTOINETTE.—No, you need not expect me this afternoon. Am still feeling much hurt by the way you let me down last week.—*Sky Pilot*.

D. M. H.—Can you meet me lunch Telfridge's 1.30 to-day? Bringing charming American friend, who is anxious to "do" Brooklands and Hendon under best possible auspices before catching Continental express 8.45 Victoria. Sure you will enjoy showing her around—she is real smart. Invited Editor well-known aeronautical journal to act as escort, but unluckily he has pressing engagement Salisbury Plain. Do come!—*Henrietta*.

JIM THE PENMAN.—Deeply shocked by wording of your article in to-day's *Daily Mail*. Feel compelled to remind you that people who say "airman" do not eventually become sky-men.—*James the Inkman*.

MARJORIE.—All is arranged, but silence and secrecy indispensable. Will therefore effect *atterrissage* in Type C.P. Valkyrie on lawn under your window 4 a.m. to-morrow. Well-directed jump should land you in passenger seat, and we will then fly together. Pursuit impossible, as have secretly disabled elevator control your uncle's machine. Any reasonable quantity personal luggage allowed, but do, please, dearest, limit amount and size of trousseau millinery, on account of head-resistance. Ever your devoted *Algernon*.

MESSRS. FITTON AND CO., STRAND.—Surprised to hear my letter with cheque has not reached you. Was entrusted to Aerial Post for conveyance on 9th inst. Sending another by more antiquated method as soon as can extract new cheque-book from bankers. Meanwhile, please hurry up six new suits (assorted) ordered in view forthcoming Circuit of Wandstead Flatts and contingent illustrated interview in *Aerated*

*Bits*. Very urgent. Will see that your name is mentioned in interview.—*Spoofman*.

D. G. G. desires to offer his sincere apologies to the elderly gentleman (name unknown) whose silk hat he was unfortunate enough to remove with one of the skids of his machine while flying over Hyde Park during Church Parade on Sunday morning last. Advertiser was at the time unaware of the occurrence, which was a pure accident, and he deeply regrets any inconvenience which may have been occasioned thereby.

Will the GENTLEMAN who took by mistake a brand new 100 h.p. Nieuport monoplane, fitted Cilt compass and complete set latest high-class instruments, from Brooklands last Tuesday evening, kindly return same at his early convenience, when his own machine (supposed by experts to have begun life originally as a 1909 Blériot-Anzani) will be found awaiting him.

INQUIRIES!!!—MARMADUKE MORTIMER, the Sleuth-hound of the Air—*vide* Press. Missing friends traced, lost articles recovered, and all mysteries instantaneously solved by the employment of my fleet of *Detective Aeroplanes*, fitted with patent silencer, wireless telegraphy, searchlight, and special arrangement of X-ray apparatus with telephoto lens attachment, by means of which objects concealed in the sub-basement of an eight-storey building can be located and photographed with ease and accuracy from any height up to 300 feet. The only genuine photograph of Mr. S. F. C. in existence was obtained in this way. Terms on application. Address: The Aerodrome, Hanwell. Telephone, 123 Hop.

M. L. E.

The manager of the Hendon Aerodrome for the current month is named Gates. May it be a happy omen.

Motto for the Aerial Postal Service: "Punctuality is the soul of Postmanship."



## THE AERIAL FARCE.

The curtain has almost rung down on the first aerial farce, and probably by this time the various big advertising firms of general providers have finished playing at being post offices. The Editor of *THE AEROPLANE* wishes to convey his thanks to the various people who have been kind enough to send him letters and postcards by the "Aerial Route," including an enterprising wine merchant, who sent no less than three specially printed postcards, all postmarked September 9th and delivered respectively on September 12th, 13th, and 14th. Having been "posted" at Aldwych, their average speed between that point and 166, Piccadilly works out at approximately 55 ft. per hour.

Great play has been made by some papers with the fact that some hundreds of thousands of people have had the great truth brought home to them, by means of the "Aerial Post," that an aeroplane can be used to carry a few pounds weight besides the pilot. One paper—which ought to know better—even suggests that the farce has been more educative than the "Circuit of Britain." Considering that several millions of people actually saw the competitors flying in the "Circuit," it does not speak highly for the intelligence of the British Public if the receipt of a postcard is more convincing than the sight of an aeroplane in the air, especially when there is nothing except a fanciful postmark as evidence that the thing was not 'taken the whole way by road. There is not even an ordinary official Windsor postmark to show that it ever went as far as Windsor. What actual evidence is there to prove that the missives ever went anywhere, except by road from the Hendon Aerodrome to the General Post Office? One assumes that they did go as far out of London as Hendon, because the public money was wasted in wear and tear of Post Office vans collecting the cards from the various general stores and taking them to Hendon, but even of this there is no direct evidence. Once the "Aerial Post" mark was put on at the "stores," the cards might as well have gone direct to St. Martin's-le-Grand for all the ocular proof they bear to the contrary, so how anyone can call them "convincing" is something of a mystery.

However, Messrs. Greswell and Driver have had a little useful practice in cross-country flying—very nearly as much as they might have had during a few days' training on Salisbury Plain, or even at Hendon if there had been much school work in hand that particular week, and Gustav Hamel has made two or three flights, none of them as good as his Brighton and back flights or his plucky fight in the "Circuit of Britain." What a farce the whole thing has been.

The next thing to be looked forward to is the balance sheet, and it is to be hoped that the various papers which have boomed the performance will publish that balance sheet in full when it appears, for it will be interesting to see how much "charity begins at home" in the shape of "expenses," and what proportion of the public's shillings and pence goes to a "Charity," which, *nota bene*, is to be approved by the Postmaster-General.

## THE R.E.P. ACCIDENTS.

M. Robert Esnault-Pelterie's letter in the last issue of *THE AEROPLANE* may be taken as sufficient evidence that he and the French Government are satisfied that there were no grounds for believing that the accidents were caused by sabotage, but there are certainly equally good grounds for the original suggestions. One has only to recall the heyday of motor racing to remember the constant attempts at sabotage of cars, sometimes only too successful. Steering rods filed half through at the most hidden points; locking nuts missing from vital parts; brake-bands partly cut; and gear-levers or brake-levers put out of adjustment were only too frequent. Water in petrol tanks, purposely adulterated oil, and punctured tyres were so common as to pass unnoticed. The removal of a locking-rod from one of Morison's valve-rods, and the attempt to supply Valentine with water in a petrol can at the start of the European Circuit were so like sabotage as to lead one to expect worse things on a bigger occasion.

It must be remembered that all eyes are on the military aeroplanes at the French manoeuvres, and that orders for millions of francs worth of machines are shortly to be placed by the French Government, and that if a prejudice can be created against any one make, there will be more orders left for the others.

The R.E.P. stood extremely high in the esteem of the French Army, so naturally it had many bitter enemies. Also the Army aeroplanes were housed in portable canvas sheds at Buc, which could be entered with comparative ease. Further, the R.E.P., being an all-steel machine, is largely bolted to-

gether, and could easily be damaged by simply slacking off a few screws, which would work loose after it had been flying for a short while. The fixing of the rear wing spars by simply bolting them by two half-clips to an upright of the fuselage is an excellent and simple piece of work, but it is quite easy to tamper with it.

Altogether it would seem that there is very fair evidence for the belief that the machines had been subjected to attempts at sabotage.

## MR. LORAINÉ'S VENTURE.

Those who can appreciate really good plays really well acted are promised a treat for the autumn season, when Mr. Robert Lorainé takes over the management of the Criterion Theatre. On the 26th inst. he will produce George Bernard Shaw's great comedy, *Man and Superman*, with the following cast:—

John Tanner .....	Mr. Robert Lorainé.
Roebuck Ramsden .....	Mr. Alfred Bishop.
Mr. Malone .....	Mr. Edward Sass.
Hector Malone .....	Mr. Guy Standing.
Straker .....	Mr. Edmund Gwenn.
Octavius .....	Mr. E. Ion Swinley.
Ann Whitefield .....	Miss Pauline Chase.
Violet Robinson .....	Miss Doris Lytton.
Mrs. Whitefield .....	Miss Florence Haydon.
Miss Ramsden .....	Miss Agnes Thorne.
Parlourmaid .....	Miss Madge Murray.

Mr. Lorainé's John Tanner is sure to be a magnificent performance, for the part fits him to perfection. The production has two other special points of interest to aviators and motorists, for Mr. Edmund Gwenn's part of 'Enery Straker is the finest exposition of the modern chauffeur that has ever been put on the stage, and Octavius, one of the three leading men's parts, is played by Mr. E. Ion Swinley, who is the son of Mr. Harry J. Swinley, London Editor of that excellent paper, the *Autocar*. Mr. Swinley, although he has only been on the stage a few months, is already in the front rank of our younger actors.

It will be interesting to see how Miss Pauline Chase handles the difficult part of Ann Whitefield, which calls for mental as well as physical qualifications. Both she and Miss Madge Murray are keenly interested in aviation, and have done quite a large amount of flying, as passengers.

## IRELAND AND AVIATION.

Mr. Swift McNeill, M.P., writing in the Dublin *Freeman's Journal* on September 13th, says: "The flying feats of Mr. Cody, the aviator, who is now first in the running for the Michelin Cup, ought to be followed with very special interest by Dubliners, for some of his first aerial experiments were made here while he was appearing with his dramatic company on the boards of the old Queen's Theatre. He was then particularly interested in gigantic kites, one of which he flew triumphantly over the theatre. His most hazardous experiment at that time, now quite a decade ago, was to make his great kite tug him in a boat from Ringsend to Kingstown. One of the scenic artists of the Queen's accompanied him on the perilous and, as it turned out, abortive voyage. This is not the only association of the famous old theatre in Great Brunswick Street with aviation. The father of Lorainé, who, by flying from Holyhead to Howth, accomplished one of the greatest and most daring feats of aviation ever recorded, was a member of the Queen's Company in bygone days, and won many historic triumphs in its ranks." Mr. Swift McNeill might have added that Mr. Cody is of North of Ireland family, though born in the States; that Mr. Moore-Brabazon, the first Britisher to fly a circular mile, is an Irishman; that Lieut. E. M. Gerrard, R.M.L.I., who now holds the World's Record for Duration with a passenger on board, is Irish; that Captain C. J. Burke, the fifteen-stone cork flyer of the Air Battalion, is also Irish; that quite a large number of our best flyers are either Irish or of Irish extraction; and that Harry Ferguson still remains the only aviator in Ireland.

## WANTED: A GLIDING HILL.

Several readers of *THE AEROPLANE* in the London district have asked whether there is such a thing within a reasonable reach of London as a hill where gliding can be carried on with reasonable prospect of practice when the wind is in one of several directions. A hill with uninterrupted slopes facing anywhere between east and west by south, but preferably in a westerly direction would probably be suitable. If any readers happen to know of such a hill they will be assisting the cause of aviation if they will communicate the fact to the Editor of *THE AEROPLANE*, 166, Piccadilly, W.

## Why the Old Type of Biplane is Unsafe.

By P. K. TURNER.

There have appeared several times lately in THE AEROPLANE statements to the effect that the type of biplane in most common use at the present day is unstable owing to its design, and is therefore dangerous. It is my purpose in this article to give reasons for these statements, since they have been received in various quarters in rather a hostile spirit.

The first and most obvious disadvantage of this type of machine is that it is quite unstable longitudinally. It should be obvious, after a little consideration of the following remarks, that to produce a stable machine the front elevating plane must have a greater angle of incidence than the main planes, while the tail must have a lesser angle.

Let us suppose, for example, that the main planes of a machine are running at an angle of  $1$  in  $5$ , and the tail at an angle of  $1$  in  $20$ , while the machine is flying in its normal attitude. Now suppose that the whole machine becomes tilted downwards to an angle of, say,  $1$  in  $10$ . Then the main planes will be at  $1$  in  $5$  minus  $1$  in  $10$ , which equals  $1$  in  $10$ , while the tail will be at  $1$  in  $20$  minus  $1$  in  $10$ , making a net angle of minus  $1$  in  $20$ , with the result that there will be a distinct downward pressure on the tail instead of the lift, so that the front of the machine will rise and correct the original tilt. (See Fig. II.)

If the whole machine were to tilt  $1$  in  $10$  upwards, then the main planes would have an angle of  $1$  in  $5$  plus  $1$  in  $10$ , which makes  $6$  in  $20$ , while the tail will have an angle of  $1$  in  $20$  plus  $1$  in  $10$ , giving a net angle of  $3$  in  $20$ ; so that, whereas in the normal attitude the ratio of the tail angle to the main plane angle was  $\frac{1}{4}$ , it is now  $\frac{3}{6}$ . The effect of this will be that the tail will immediately rise, again correcting the disturbance produced. This is, in essence, the whole theory of a non-lifting tail, and, be it noted, the same train of reasoning applies to the front elevator, bearing in mind that, owing to the difference in position, the front elevator must run at a greater angle than the main plane in order to produce a stabilising moment.

If the angle of the tail is the same as that of the main plane, the result is to attain a neutral stability, i.e., the tail produces no effect, either in upsetting the machine or preserving its correct attitude.

If the tail rises at a greater angle than the main planes, the forces produced tend still further to upset the machine, as will be seen on again referring to Fig. II.

Now, in the machine under discussion there is both a tail and a front elevator; but—and it is rather a large but—the tail runs at about the same angle as the main planes, while the front elevator runs, not merely at a less angle, but actually with its front edge lower than the trailing edge, and so acts as a depresser. The result is that if, owing to a gust, the machine gets tilted either up or down, forces are instantly produced tending still further to upset it; so that, except in a dead calm, the machine constantly needs the attention of the pilot, as did the original Wright machine; the only difference being that machines of the ordinary lifting-

tail type are so very sluggish in all their movements that the pilot has time to think before making his corrections.

Another point of danger in reference to fore and aft stability is the fact that the controls are not sufficiently powerful. The proof of this is given when a sharp corner has to be turned, in which case almost the whole power of the fore and aft controls has to be used to overcome the gyrostatic torque of a rotary motor, leaving little or no provision for combating an awkward gust at the critical moment.

We have also the fact that the tail plane runs in the slip stream, or wash, of the propeller. This means that the tail is supported by an air current about 50 per cent. greater in velocity than the air speed of the machine, that is, assuming that the propeller has an efficiency of 66.6 per cent.

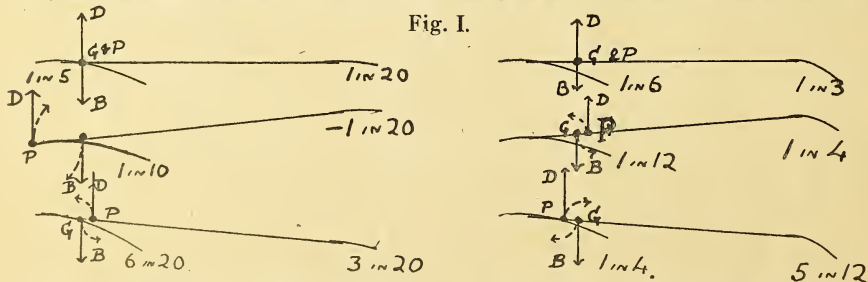
The tail of an ordinary lifting-tail machine under these circumstances lifts about 200 lbs., but if for any reason the engine strikes work, the slip stream is non-existent, and the air speed acting on the tail is diminished by about one-third. Now, since the lift of a plane varies with the square of its air speed, the lift of the tail will be reduced to one-half its former value, so that when the engine of a machine of this type stops unexpectedly, there is 100 lbs. of lift taken off the tail just at the moment when extra lift is wanted to get the tail up and the nose down to start a glide.

Laterally the machine is just as unsatisfactory as it is longitudinally. There is no dihedral angle, and an attempt is made to secure lateral stability simply by placing the centre of gravity of the machine some considerable distance vertically below the centre of pressure. This certainly has a stabilising effect so long as the machine is on the straight course; but as soon as the machine begins to turn, the outer wings are travelling faster than the inner wings, and the centre of pressure shifts outwards till the larger plane area between it and the centre of the turn is balanced by the higher speed of that part of the plane which is outside it.

Now the centre of gravity remains at its original position, and the result is what is known as a couple, tending to turn the machine right over towards the inside (see Fig. II.). In consequence of this, hardly any turn can be made on this type of machine without the use of the lateral control. The inside flaps must be held down to keep the machine from slipping inwards. A curious point in this connection is that when a skilled pilot wishes to make a sharp turn, he almost invariably commences by pulling down the outside flaps, as the machine is so sluggish that it must be assisted in banking at the beginning of the turn. As soon as it is banked he has to pull over his lever and hold down the inside flaps to prevent over-banking.

This is very difficult and unsatisfactory when compared with the state of affairs on a modern machine which is properly designed. In this latter case, as soon as the machine begins to turn, the extra speed of the outer plane makes the machine bank; but in doing so, the inner planes, owing to the dihedral angle, have a greater effective surface than the outer planes, so that the centre of pressure does not shift

Fig. I.



Stable Machine, showing righting forces when the machine tilts up or down.

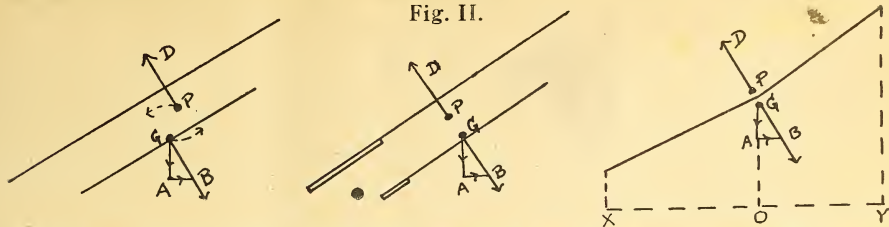
Unstable machine, showing forces increasing disturbances when machine tilts up or down.

G—Centre of Gravity: P—Centre of Pressure: GB—Total Force against Lift of Machine: PD—Force Lifting Machine: Numbers show Angle of Planes with Horizontal.

If there be a front elevator, the elevator takes place of main plane above, and main plane that of tail.



Fig. II.



Old Style Biplane, without use of flaps : showing "couple" tending to turn machine over. Old Style Biplane, flaps in use : showing the opposing forces in line, and therefore balanced. Modern Machine, with dihedral angle : showing opposing forces in line without use of control.

G—Centre of Gravity : P—Centre of Pressure : GA—Force of Gravity : AB—Centrifugal Force : GB—Total Force against Lift of Machine : PD—Force Lifting Machine : OX—Effective Surface of Inner Wing : OY—Effective Surface of Outer Wing.

outwards at all, but remains in line with the centre of gravity—(see Fig. II.)—so that there is no tendency for the machine to alter its banking. On such a machine the pilot usually when turning uses the rudder alone, and lets the machine bank herself.

Considering that, as I have just pointed out, the lateral control is in continual use, it is rather unfortunate that the type of control generally used is the most inefficient possible. Suppose that the pilot, to correct a side gust, pulls down the flaps on the inside to twice their normal angle, their lift is at once doubled. Now their drift or resistance is proportionate to their lift and the angle at which they run, so that on doubling the lift the resistance is multiplied by 4. Hence, whenever on a machine of this kind the lateral control is used, a heavy head resistance is imposed at one end or the other of the main planes.

This, of course, has a most disturbing effect on the steering, and if the controls are used to their full extent it may become absolutely dangerous, for if the rudder is not powerful enough to keep the machine on a straight course in spite of the unbalanced resistance on one side, the machine will naturally turn towards the side on which the flaps have been pulled down, so that the extra lift obtained by pulling down the flaps is nullified by the fact that the outer planes have an increased comparative speed.

If the whole planes were warped, instead of only a comparatively small flap, the difference in angle would not be so great to produce the same righting effect, and the machine should be kept from rolling without nearly such a bad effect on the steering.

Yet another disadvantage of flaps lies in the fact that, being suspended necessarily by their front edges, they are only balanced when they are doing no work. As soon as they are pulled down, the pilot's arm has to do the greater part of the work in holding them. This becomes, in the military type, a very serious matter, as witness the accidents which Hubert has had at Hendon on a military machine, which has extra large flaps. Hubert himself has remarked on various occasions that in anything of a wind it is four men's work to use the flaps, and both Mr. Compton Paterson and Mr. Grahame-White, being free agents, have for a long time refrained from flying that machine except in a calm. Hubert, it is true, is rather lightly built, but even such solidly-built men as Pixton, Gilmour, and England may often be seen in windy weather to be using every atom of their strength and weight in order to work their control. Almost all other types of lateral controls, viz., warp, balancing planes, or pivoting tips, are more or less balanced.

One of the most characteristic features of this type of machine is the outrigger which supports the tail. The use of this is unfortunate, inasmuch as, for a given strength, it is heavier than the so-called "monoplane" fuselage, and at the same time it offers very much more head resistance.

It also has the following disadvantages (in referring to a monoplane fuselage, I mean, of course, one that is covered in all of the pilot's seat): The monoplane fuselage acts in exactly the same way as a vertical fin. When the machine is built with an open outrigger and, as in the case under discussion, with no blinkers to help the rudder (as there are on the new Wright type), the first effect of using the rudder

is not to make the machine turn, but to cause it to progress crabwise, and consequently, as mentioned before, if the turn is to be made quickly, it is necessary to get the machine banked artificially.

It is quite easy to see why this is so. In untechnical language, a rudder naturally attempts to go through the air edge on; if there is a vertical fin, enclosed fuselage, or blinker, the rudder will be at an angle with whichever of them the machine possesses, and since the only way for both these surfaces to progress edge on is for the machine to take a circular course, it will at once commence to turn. If there is no vertical surface of any kind besides the rudder, the only effect of turning the rudder, say, to the left, is to throw the tail of the machine over to the right, and it is not until the pull of the screw in the new direction overcomes the momentum of the machine on its original course that the turn begins.

Secondly, as was pointed out in my recent article on "side-slips," the amount of vertical surface behind the main planes is very important; for, the greater this surface may be, the sooner will the machine, should it commence to side-slip, alter the side-slip to a nose dive, and come under control. This would not be so important if there were on the machine a dihedral angle, for when a machine is slipping sideways a dihedral angle tends to bring it on an even keel as it falls. But on this type of machine there is no vertical surface, except the comparatively small rudders, nor is there a dihedral. The consequence is that the machine will continue its side-slip *ad terram*, in spite of all the pilot's efforts.

Lastly is this point, which, while quite unimportant in the design of a flying machine, pure and simple, is of immense importance considering the machine as a vehicle for a human being. This is the placing of the pilot, having regard to the possibility of a smash.

The position of the pilot in this type of machine was undoubtedly the best at one time, for the pilot was free from the slip stream of the propeller, and he had a very good view of the country below and in front of him. In old days, when there was never any probability of other machines being in the air at the same time and at the same place, and when all machines were dangerous, whatever the pilot's position, it was correct to put him in front. But now it is as important to see above and behind as it is to see below and in front, and it has been well proven that when the pilot sits behind his engine, and has some considerable amount of fairly solid material in front of him, it is possible to smash the machine practically to atoms without serious injury to the pilot. On the other hand, when the pilot is stuck out on the front edge of the lower main plane, or in advance of it, so that he is certainly the second thing in the whole machine to hit the earth in a smash, he is still, as far as his position goes, in the unhappy state of the earliest pioneers of aviation, who regarded every flight as a probable suicide.

In those days this was all very well, and we must deeply honour the men who did their work under these conditions; but it seems to my mind rather unnecessary, and even savouring of bravado, to fly to-day in a machine of this description when there are other designs which, while infinitely safer laterally, longitudinally, and in the matter of the pilot's position, will fly at twice the speed with two-thirds of the horse-power.



## The Week's Work.

## Monday, September 11th.

BROOKLANDS.—Maurice Ducrocq up in early morning tuning up biplane. Percival on Billing biplane doing quaint turns with tail well down. Bristols busy testing new type propeller. Pizey and Fleming both having bad time, propeller out of balance and not suited to machine, which usually flies finely. In evening Pizey took Captain Richey up to 1,000 ft. to train for height. Then Richey practising right-hand turns for fifteen minutes. Later, Fleming up to test engine. Brereton again practising landing. Then Richey also practising landing for ten minutes. After sunset Brereton went for certificate, but too late, and so disqualified under F.A.I. rules. Deperdussin school out in early morning, but only time for Robinson to do short hops before wind got up. In evening Chinnery doing straight flights, but inclined to get up too steeply and sit on his own tail. Avros, as usual, early starters. Raynham tuning up new biplane with 35 h.p. Green, in view of Michelin Cups, but not yet lifting well enough for turns.

HENDON.—Gassler, of the Chanter school, out in the evening. Greswell and Driver across country to Windsor.

THE PLAIN.—Morning very windy. Busted and Pixton up for trial, but conditions too bad for tuition. In evening wind dropped and flying started by Pixton taking up passenger, who was afterwards taken by Busted. Lieutenant Newall made two fine solos, each about ten minutes, rising to 100 and 250 ft. respectively. After this Lieutenant Watts up for solo at 80 ft. for ten minutes. Captain Steele Hutcheson and Lieutenant Strover next sent for first solos, which they did in remarkably good style. Captain Steele Hutcheson's flight lasted twelve minutes, during which he made right-hand turn *vol plané* from about 200 ft. Lieutenant Strover flew eight minutes. He also did good right-hand turn and finished with *vol plané* from 150 ft.

AIR BATTALION.—Officers of Section early on scene, and made good flights till too dark to see. Lieut. Barrington-Kennett, with Lieut. Beale, R.F.A., as passenger, tried throwing message bags from aloft at a white mark on the ground. Very good judgment shown, bags falling within few yards of target.

## Tuesday, September 12th.

BROOKLANDS.—Flanders monoplane doing fine performances. Kemp out alone for ten minutes, then with Howard Flanders as passenger ten minutes, flying well over 60 m.p.h., and wonderfully steady. Kemp never using warp on corners, and machine finding own angle of bank. In evening Kemp up alone and let go control completely. Machine rose to 700 ft. with rudder control only, then came down *en vol plané*; total time four minutes. Also up for ten minutes with Maurice Wright as passenger. Bristols out early. Pizey with Lord Basil Blackwood as passenger. Captain Richey solo for fifteen minutes, and tried *vol plané* from 150 ft., pancaking slightly at finish and breaking chassis wires. Machine out again in an hour with Fleming up. Brereton for third time did all the certificate flights observed by Petre and Bell. In evening Pizey up testing with Bendall, one of Bristol mechanics, as passenger to observe engine. Captain Richey training. Fleming taking passengers, and Pizey up with Bell as passenger to show him difference between biplane and monoplane. Birdling school

out early, Astley, on "Big Bat," made short trip, soon came down with broken ball race in infallible Gröme. Deperdussin school started new pupil, Mr. Chattaway, who is *not* an Egyptian, though he has lived in Egypt. Mr. Chattaway has had considerable experience of constructional work with Short Bros., and has joined Deperdussins to learn to fly a monoplane. His first attempt at rolling distinctly good. Garne also out trying short hops. Has developed habit of switching off with nose up and tail down just after leaving ground, which is likely to lead to trouble. Avro school out in evening. Noel taking pupils on engine-behind machine, while Raynham tuning up the new machine.

HENDON.—Chanter school out practising, as usual. Gassler flying, and De Villiers, a new pupil, out for first time, rolling well in straight lines.

THE PLAIN.—Pixton and Busted up alone, to test conditions. Found fairly strong wind, but not enough to prevent school work. All pupils then practising right-hand turns. Lieutenant Strover did two solos, reaching 150 ft. in first and 200 ft. in second, lasting ten minutes each. Captain Steele Hutcheson next did two solos, first at 200 ft. and second at 350 ft. More solos made by Lieutenant Watts, thirteen minutes at 150 ft.; and Lieutenant Newall eight minutes at 100 ft.; all pupils showing good progress. Busted took Lieutenant Cross for long cross-country flight, and then Lieutenant Cross took charge of machine with Busted as passenger.

LANARK.—Ewen across country round outskirts of Lanark, and pupils rolling.

AIR BATTALION.—Another fine calm morning. Lieut. Barrington-Kennett, flying in usual brilliant style at 1,000 feet, coming down in spiral *vol plané*. Lieuts. Connor and Reynolds also adding more to already long lists of flights. In evening, about 4.30 p.m., south-west wind blowing on ground but not to be found few hundred feet up; so all busy as usual. Lieut. Reynolds conspicuous, as he appeared in uniform. Rather unusual, as majority of officers prefer mufti. He made several flights, each time taking up an officer from some regiment or other, nearly all on the Plain being deeply interested in aviation. Lieuts. Barrington-Kennett and Connor each made several flights.

## Wednesday, September 13th.

BROOKLANDS.—Fleming out early on Bristol, but too wet and windy for flying during day. Noel, on engine-behind Avro, also out in 5 to 15 m.p.h. wind with McCallum More as passenger.

THE PLAIN.—Heavy rain and wind all day. No flying possible.

AIR BATTALION.—About 11 a.m. Lieut. Connor made short flight round the usual course, but nasty air eddies which abound on the Plain during the day soon made him descend.

## Thursday, September 14th.

BROOKLANDS.—Flanders having arranged to carry out "wireless" experiments for Marconi Company, Kemp out on monoplane doing straight flights with fifty yards of wire trailing from wing-tip, and afterwards did several circuits. Pizey on Bristol out early, and Captain Richey training. In evening Fleming, Pizey, and Richey all out, and Lawrence doing post-certificate training, but stopped by engine trouble.



The Flanders monoplane climbing well, with Ronald Kemp at the wheel and Mr. Corbett-Wilson of Kilkenny as passenger

Percival in morning up at 300 ft. on Billing when cylinder cracked during a turn. Came down enveloped in steam and hot water, but without damage; stationary cylinders do not fly off when cracked. Eric Pashley, awaiting repaired Humber engine, out training for certificate on Birdling-Sommer. Ducrest on biplane across country to Walton, and back along river round Weybridge at 500 ft. At Deperdussin school Porte and Bell doing circuits on certificate machine. Engine petered out as Bell in middle of turn, but no damage followed. Robinson rolling for first time on same machine, finding no trouble with extra speed. Chattaway rolling well on "taxi." New pupil, Signor Giovanni Sabelli, joined school. Avro school not out, all working on Raynham's Michelin machine.

HENDON.—Lieut. Cammell started at 7 a.m. for Farnborough on his repaired Blériot two-seater. Repairs done by soldier mechanics, and flight made without any preliminary test whatever.

THE PLAIN.—In morning wind still high. Gilmour out giving lessons in the art of *vol plané* to Lee, Lieutenants Newall and Cross. Jullerot up in evening. Lee was then out for solo, and made one wide circuit at 150 ft. Lieutenant Joseph then for solo in good style. Lieutenant Newall started to make certificate flights, observed by Captain Fulton, but came down half way owing to engine trouble. This put right and Jullerot made trial, but darkness prevented another attempt. Gilmour took Smith-Barry and Lieutenant Joseph for lessons in *vol plané*, afterwards taking a passenger. Busted then did a solo and later took up Lieutenant Hooper, a new pupil.

LANARK.—Ewen flew across falls of Clyde on Deperdussin, six miles from Aerodrome, in course of cross-country flight of eighteen miles. Warren doing circuits on school Blériot. Forson, Neeld, and Jackson all doing rolling practice.

AIR BATTALION.—Officers out early, after missing an evening's flying, which is very unusual. Lieuts. Barrington-Kennett, Connor, and Reynolds made several flights round the Plain, steep banking and *vols planés* being the latest fashion. In the evening, about 4.30 p.m., Lieut. Barrington-Kennett flying well at 1,500 feet, finally making splendid landing with one of his favourite spiral *vols planés*. Later he took up as passenger Sapper Langlier, of the "Section," performing some fine banking low down. Still later, near dusk, he took up Second Corporal Ridd as passenger, flying low, but banking with perfect control. Lieut. Reynolds during the evening took up several passengers.



The Flanders Monoplane banking over the sheds at Brooklands.

#### Friday, September 15th.

BROOKLANDS.—Flanders monoplane out in stiff wind, with Kemp at wheel, doing four circuits very steadily, then did three circuits with Furbank as passenger, pilot and passenger weighing 221 st. In afternoon Mr. Bangay, of Marconi Company, testing electrical capacity of metalwork of fuselage with intention of using machine itself as one of "aerials." Fleming out on Bristol testing engine. Had rather alarming experience. Engine stopped suddenly when over sheds with 10 to 15 m.p.h. wind behind. No room to do straight *vol plané* before hitting track, and side drift of wind too much to land with side-way on, so had to do sharply banked turn right over top edge of banking and just cleared inner fence nicely before straightening out to land head to wind. Very pretty example of a clever "save." Noel out in evening on engine-behind Avro, also Raynham, Young, and Hunter. Astley on "Big Bat" of Birdling school for short flight, and then Lieutenant Harford rolling on same machine. Bertie Rippen rolling and doing straight flights on Hanriot. Deperdussin school started third new pupil of week, Lieutenant Wilkins, R.N.; who showed good idea of rolling.

THE PLAIN.—Very windy. Jullerot and Pixton out for trials, but agreed weather too bad for tuition, and instruction in machine details was therefore given in the hangars.

LANARK.—Forson rolling, and broke propeller running into post, Warren doing circuits on Blériot. Jackson and Neeld rolling.

AIR BATTALION.—Very strong wind, and only Lieut. Barrington-Kennett out. Did not stay up long, as he had all his work cut out to keep control of machine, using both hands on the lever. This particular machine has lever in the centre of *carline*, thus giving pilot a chance to change hands, and to use both hands if necessary. In the evening Lieuts. Reynolds and Connor out on Bristols flying at their best, taking up passengers and performing fine banking, finishing up with their favourite *vols planés*.

#### Saturday, September 16th.

BROOKLANDS.—Pizey on Bristol with Captain Richey as passenger, testing engine at 800 ft. Richey doing solos. Bertie Rippen, on Henrietta, doing straight flights. Deperdussins



Mr. Copland Perry, the new Valkyrie pilot.



out in force. Bell got in three circuits on certificate machine. Wilkins, Chattaway, and Garne all in turn on "taxi," rolling and hopping. Last-named still seems not to have got the hang of the machine, getting up suddenly and switching off too soon instead of flattening out and flying. In evening Flanders monoplane out in nasty puffy wind, Kemp doing five or six circuits solo, flying very fast, and then four circuits with Lieutenant Harford as passenger, at 100 to 150 ft. Kemp's flying and landing are superb. Machine in every way equal to best foreign products and far superior to most. Should be well in running for Michelin Cups. Hunter went for certificate in morning on engine-behind Avro, and completed all but height test in very tricky wind. Raynham and Noel on same flying well in evening and carrying passengers. Fleming on Bristol doing fancy flying and taking a lady passenger up to 500 ft., finishing with splendid *vol plané* head to wind. Lawrence out on Bristol continuing post-graduate course. Considering shocking weather all the week, amount of work done very satisfactory. Prospects excellent all rounds as soon as weather settles. Fight for Michelin Cups likely to be very fierce.

HENDON.—No flying at all owing to Territorial gymkhana. Wrestling on horseback, tent-pegging, etc., very interesting to watch, but not conducive to progress of aviation.

THE PLAIN.—No flying in morning as wind continued blowing from Friday night.

LANARK.—All pupils out on Blériot. Ewen across country on Deperdussin round Carstairs. Jackson and Neild reached straight flight stage. School busy.

AIR BATTALION.—Lieuts. Barrington-Kennett, Reynolds, and Connor made several flights with and without passengers. Lieut. Beale, of R.F.A., being a frequent passenger, is very keen on flying, and will no doubt eventually be a member of the "Air Section," R.E. Lieut. Reynolds, during one of his flights this evening, flew over Air Battalion camp, landed, delivered a message without stopping his engine, then flew off again in direction of West Down. Lieut. Barrington-Kennett had to retire before it was dark, as his engine was misfiring through a leak in his oilpipe. This early retirement was rather unusual for him, as he is nearly always the last to come in. Lieut. Connor took up several passengers, rising to a good height each time. He also encircled Stonehenge. A striking contrast, the ancient temple and the modern aeroplane flying over it.

#### Sunday, September 17th.

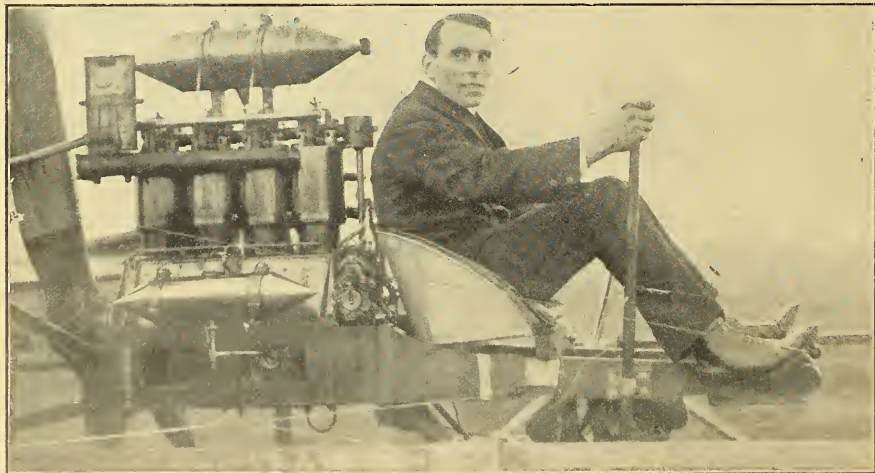
BROOKLANDS.—Hunter on engine-behind Avro finished certificate test by going up to 400 or 500 ft. Congratulations. Has been a long time getting his certificate, thanks to other people's breakages and prolonged bad weather, but knows all the more about flying in consequence. Now a good, sound flier. After

doing test, took up two passengers. In evening Raynham on new 0-P-2-1 Avro, for Michelin Cup, up to 600 ft., with little 35 h.p. Green pulling nicely. Blondeau out first time since ill-starred visit to Plymouth, on Snowden-Smith's racer. Long-staff also out. Kemp, on Flanders, going well; no fault to find anywhere. Deperdussins out early, Sabelli rolling and Chattaway showing exceptional ability, doing good straight flights at fourth attempt. In evening everyone very busy. Kemp, on Flanders, flying for two or three hours with different passengers, including Corbett-Wilson, of Kilkenny, finally came down with leak in air-valve of pressure tank. During afternoon was carefully timed for several laps while following the line of the track, and speed works out at 65.2 m.p.h. Raynham, on new Avro, up to 400 to 500 ft. for long time. Young and Noel on engine-behind Avro, and then Hunter doing circuits, much to amusement of his sixteen-month old son and heir. Spencer Grey also out on same machine, to keep in training pending formation of Naval Air Fleet. Fleming on Bristol doing astonishing banked turns—but well away from the crowd—to admiration of some visitors from another aerodrome. Later took up Harry Delacombe, the Bristol flying manager, as passenger, and then Mrs. C. G. Grey, and took some time to find a landing place owing to number of machines on ground and in air. Lawrence, on same machine, practising. Spencer, on Spencer biplane, also doing fancy turns. Rapidly becoming one of best biplane pilots in this country. Porte on Deperdussin did a couple of circuits in nice style, but engine not right yet. Maurice Ducrocq out for miles across country at 1,000 ft. or so with lady passenger, landing in usual faultless style. N.B.—Raynham wishes it to be known that he did *not* carry passengers during flight by moonlight as stated in a contemporary. He regards such a performance as unwise, and certainly one can scarcely imagine such a sane flyer indulging in such a trick.

HENDON.—"Darraacq," the music-hall artist of "whirling wheel" fame, now pupil at the Chanter school, after fifteen minutes' instruction, now a circuit of the ground and made a perfect landing. Chanter also out practising. Corbett-Wilson, of Blériot school, pancaked while attempting left-hand turn, damaging front part of machine, but not breaking wings. Salmel flying cross-country for over half an hour. Greswell arrived back from Windsor at 5.40, doing the journey in sixteen minutes. Hamel arrived also from Windsor, 5.55, just before Mr. Cammell's fatal accident, described elsewhere.

#### Another Qualified Aviatress.

Mme. de Rick, the Dutch-Javanese aviatress, who was much in evidence during the European Circuit, qualified for her certificate on a Hanriot on September 9th. Compliments from her British friends.



Mr. Ridley Prentice, manager of the Valkyrie School, at the helm of the Green-engined school machine.



## The Death of Edouard de Niéport.

In Edouard de Niéport, commonly known as Nieuport, the world, as well as France, has lost one of its great men, and we must all equally mourn his loss, the more so as his death was due to an accident which ought never to have happened, and when it did happen should not have been fatal.

Nieuport, to call him by his better-known name, as a reservist was called up for his training, with many other civilian aviators, during the French manoeuvres. He was ordered to report at Charny, near Bar-le-Duc, being then at his works at Mourmelon. After being delayed several days by bad weather, he decided to start on Friday, September 15th, in spite of the weather. This he did, and landed at Charny without trouble.

On his arrival he found a crowd of military notabilities, French and foreign, awaiting him, and some of them expressed a desire to see him fly again. Nieuport interpreted the wish as being an order, and went up, in very bad weather, to please his superior officers. He started head to wind, turned, and flew down wind, and then started to turn again to come up wind. To avoid being drifted out by the wind he made a sharply banked turn, and side-slipped on to his left wing, from a height of only thirty feet or so.

He was picked up with a broken leg and a few bruises, but it was found that he had severe internal injuries, and of these he died on Saturday evening.

Knowing the Nieuport machine, it seems fair to assume that the accident was a comparatively innocuous side-slip, and nose-dive combined, and that if he had been higher up Nieuport could have regained control and flattened out for a proper landing; but even as it was there seems no reason why the accident should have been fatal, till one considers the Nieuport belt. This, in the Nieuport, as in the Antoinette, is of solid leather, rather narrow, and devoid of springs. Mr. Maurice Ducrocq, when flying a Nieuport some few months ago in France, made a rough landing which resulted in a broken rib, owing to the inelasticity of the belt. It is only logical to conclude, therefore, that a really bad fall would result in the belt crushing the ribs into the lungs, or causing internal lesions, such as those which caused Nieuport's death. A belt, to be efficacious, must be broad, and it must be elastic.

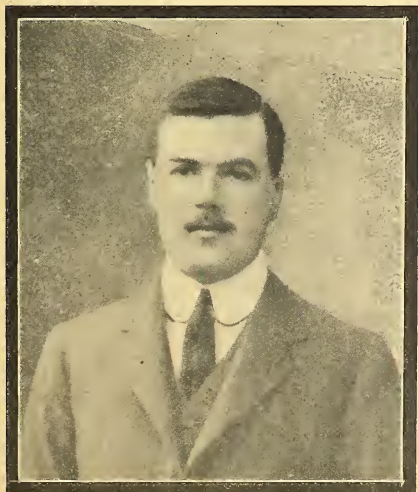
Edouard de Niéport, born at Blida, in Algeria, on August 24th, 1875, was the son of Colonel de Niéport, Commander of the Légion d'Honneur. Despite the wishes of his family he took to mechanical pursuits, and even made a name for him-



**The late Edouard de Niéport and his greatest work, the 28-h.p. monoplane, which flies at sixty miles an hour.**

self as a racing cyclist. He later took to the motor trade, and the Nieuport plugs and magnetos soon became famous, both being used by the 8-cylinder racing Darracq, which was the first car to travel at a speed of 200 kilometres per hour. His monoplanes now hold the majority of the speed and long-distance records, and he himself flew at over sixty miles an hour with only 28 h.p. engine. De Niéport did more than any other constructor for the production of an efficient machine, and his loss is a calamity to the progress of aviation.

## The late Lieutenant Cammell, R.E.



**The late Lieutenant R. A. Cammell, R.E.**

Everyone in this country must sympathise with the little band of pioneers who constitute the officers of the Air Battalion, in the loss of their comrade, Lieutenant Cammell. He was one of the first military men to take up flying actively, and he has done some quite remarkable flights, which have passed unnoticed owing to his personal dislike of publicity. Probably the most remarkable of these was his flight last year on the Type XII. Blériot, "White Eagle," from Salisbury Plain to a point within a few miles of Farnborough.

Since the formation of the Air Battalion he has been one of its most active members, flying a Blériot two-seater, which was his own private property. Besides a number of flights all over Salisbury Plain, he took part in the "Circuit of Britain," unfortunately smashing up soon after the start from Hendon. After his machine was repaired he flew from Salisbury Plain to Huntingdon and back, smashing his machine again at Hendon on his way back.

He was of a scientific turn of mind, and always carried a number of instruments with him on his machine, but withal he had a streak of recklessness in his character, which was largely accountable for his premature death. This was shown by the fact that, having smashed his machine at Hendon and having repaired it with the help of two soldier mechanics, he took it straight out of the shed and flew it to Farnborough on Thursday last without making a single test flight, and without even coming back for a hat or coat.

His death on Sunday last, September 17th, occurred while flying the Gnome-Valkyrie which was recently presented to the Government. He had been up for a flight in the morning as a passenger with Mr. Barber, who had previously tested the machine thoroughly, and expressed his satisfaction at its steadiness, and in the afternoon he took it in hand himself for the first time. He rolled to the end of the aerodrome, and then took the machine straight off the ground.

After flying one circuit, banking very sharply indeed at the corners, he went out over the sheds and came back with a left-hand turn towards the centre of the ground. Mr. Barber had

warned him against landing in the rough ground at the north end by the railway bank, and it appeared as if in trying to avoid landing there he attempted another very sharp turn, and owing to his being unacquainted with the machine failed to correct the bank, with the result that he came down sideways.

This seems a perfectly natural explanation, for, being used to the Blériot warping wing, he would instinctively put the lever hard over to the right to correct the bank, so using the aileron, or stabilising flap, too fiercely and causing a drag on the left side, which would cause the machine to swing to the left and increase the bank instead of correcting it, the proper course being to swing the rudders to the right, which apparently he did not do till it was too late.

Mr. Jerrard, of the Blériot School, who was an eye-witness of the accident, writes: "He was flying over the hangars at about 100 feet, when he commenced to turn, with the intention of landing straight in front of the sheds. As the machine was planning to the ground, and was about 30 feet off, it suddenly began to bank very heavily, swinging round to the left. The right wing rose still higher, and the machine side-slipped and dived." Mr. R. F. McFie and Mr. C. Phillips Vierke,

who were present, corroborate the sad story as given above. Mr. Jerrard continues: "Poor Cammell was thrown from the seat before the machine struck, but was hit by the chassis, one of the struts of which pierced his back. He was taken away in a car, but died before reaching the Sick Asylum. His loss will be a great blow to the Government, to whom he was such a willing and excellent servant, for no one could fly the Blériot two-seater better than he. He was beloved by those over whom he had authority, and to his many friends his loss will be irreparable."

Lieut. Cammell was born at Trwernen on January 10th, 1886, and took his certificate on December 31st, 1910. He was gazetted to the Royal Engineers some three years ago. His death was not altogether a surprise, for there has been for some considerable time a feeling among those most closely in touch with aviation that he was one of the half-dozen or so of our present-day aviators who are preordained to a violent end. Not that he was a bad flyer, far from it, for he was one of the best flyers in this country, but merely that those who knew him best feared that he would some day put too much trust in his own judgment and ability.

### The British Michelin Prizes.

Readers will doubtless remember that there are two British Michelin Prizes on offer this year; one for greatest speed over any one of several courses of 125 miles in length approved by the Royal Aero Club, the other for the longest distance covered in the day over certain approved aerodromes. In each case the machines must be of British build, driven by British-made engines and piloted by British subjects. The "speed" competition is open till October 15th, and the "long-distance" competition till October 31st.

Last year there was only one competition, that for distance, and there were only three competitors, viz., Mr. S. F. Cody, on his own biplane, with a Green engine, who won; Mr. T. Sopwith, on a Howard-Wright, with an E.N.V. engine, who put up three very fine flights; and Mr. Graham Gilmour, on a Bristol, with E.N.V., who only flew on the last day of the competition, and was brought down after flying a few miles. This year the competition is likely to be very keen. The only flight up to the present is Mr. Cody's, on his Cody-Green, who covered the 125 miles in 3 hrs. 63 mins., but the next few weeks will see a number of others on the warpath. A most promising competitor in both competitions is Mr. Ronald Kemp, on the Flanders monoplane with Green engine, which does well over 60 miles per hour. For the speed competition only, Mr. Astley, on the new Birdling monoplane, with an A.B.C. engine, should put up a good show, if he can get tuned up in time. Mr. Cecil Pashley, an exceedingly light weight, should do well on the old Humber monoplane with its new engine of the Clerget type. Mr. Cody, on the Cody-Green, will, of course, fight for both prizes so long as his machine will fly and there is time to qualify, and his great experience should help him to beat possibly faster competitors. Then there are the Bristol machines, probably a monoplane and a biplane, both with A.B.C. engines, which will go for both competitions, and will most likely be piloted by Mr. Graham Gilmour and either Mr. Gordon England or Mr. Howard Pixton. There is also the Blackburn monoplane, with an Isaacson Radial engine, which will be driven by Mr. B. C. Hucks or Mr. Hubert Oxley, and last, but by no means least, there is the Howard-Wright biplane, this time with a Green engine, which will be driven by Mr. Longstaff, a new flyer, as yet but little known, but showing considerable promise.

### The 100-h.p. Short Biplane Flies

The Short 100 h.p. biplane, which was first described and illustrated in *THE AEROPLANE*, made a successful debut on Sunday last, when it made several good flights, piloted alternately by Lieut. Samson, R.N., and Mr. Frank McClean. Congratulations to the enterprising Short Brothers.

### British Army Purchases.

It is understood, though not officially announced, that the War Office have bought a Nieuport, which will be piloted by Mr. Barrington-Kennett, and a Deperdussin, which will be piloted by Captain Fulton, the officer commanding the Air Company. A Bréguet has already been taken over by Mr. Hynes, who hopes to fly it over from France, and a Sommer monoplane is said to have been bought for Mr. Reynolds, but why a Sommer, which is only an altered Blériot, is something of a mystery. Now why not have a Bristol, a Vickers, and a Flanders monoplane, which have shown themselves as fast as any of the French machines of their size, a Blackburn monoplane, such as that which has been flying so well in the West Country, and, say, an Avro

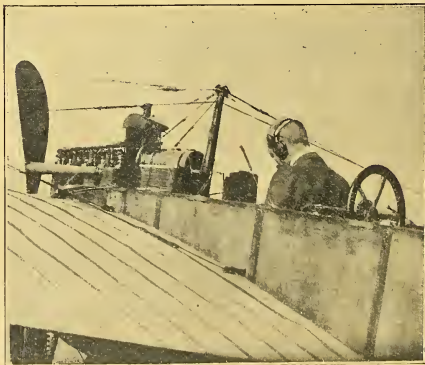
biplane, a tractor-screw Howard-Wright biplane, and a twin-tractor Short biplane? Then we should be able to make fair comparisons between British and French machines. As it is, only one British maker has had a chance of showing what his machines can do.

### Military Aviation in Morocco.

On September 14th, Brégué, the brother of the M. Brégué who was in London managing the Comte de Montaleut's flights at Brooklands, started from Casablanca to fly to Fez on his Bréguet, a distance of 300 kilometres. He came down halfway to deliver a message to his uncle, Commandant Brégué, in charge of a military station at Senhadda, and continued his journey in the evening, arriving without incident. The flight, over a semi-hostile and very disturbed country, is most remarkable, and has had a very salutary effect in overawing the natives, who regard the machine as a kind of European devil.

### Wireless.

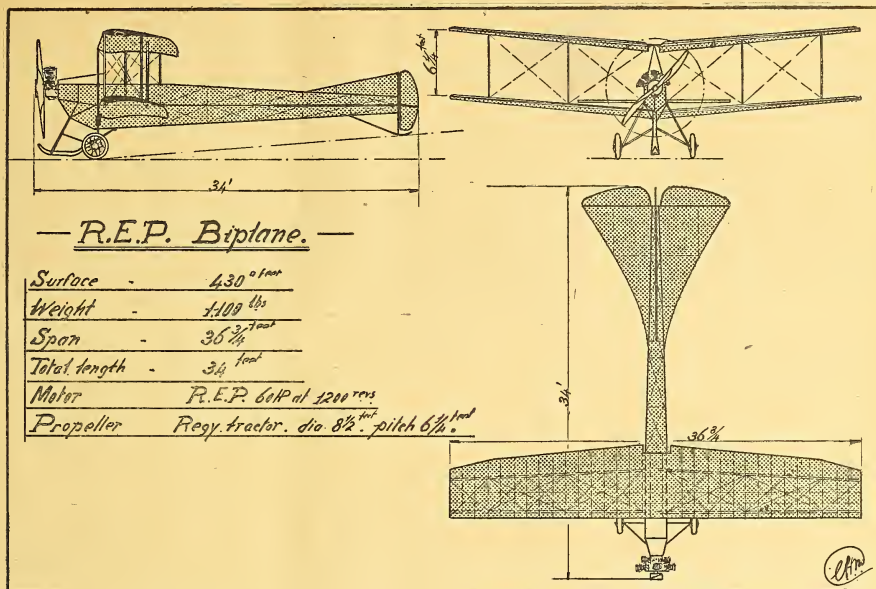
The Marconi Wireless Telegraph Company have made arrangements with Mr. Howard Flanders to try experiments in wireless telegraphy at Brooklands with an apparatus to be carried on the new Flanders monoplane which has made such a remarkably successful debut. Mr. Bangay, of the Marconi Company, has already made some preliminary tests, and Mr. Ronald Kemp, having flown the machine with trailing wires,



Mr. Bangay testing the Flanders for electrical capacity.

finds no difficulty in controlling it when so fitted. Mr. Flanders is now building a larger pair of wings so as to carry the full tanks necessary in the long-distance Michelin Cup competition, as they will lift the apparatus more easily, although they will slow the machine somewhat. This is the first time the great Marconi Company have made aeroplane experiments, previous tests having been made by private experimenters.





#### The R.E.P. Biplane.

The idea of M. Robert Esnault-Pelterie turning out a biplane will come somewhat as a shock to those who regard him only as one of the leading exponents of the monoplane, but such well-known firms of biplane-makers as Voisin, Farman, and Sommer have already turned out monoplanes, so this may be a sort of retaliation on the part of a monoplane, who merely wants to show that he can build biplanes as well as, if not better than, anyone else. It also shows that Lord Northcliffe's recent dictum that the result of the *Daily Mail* Circuit had "fixed the type" in favour of monoplanes was, to put it mildly, journalistic.

As will be seen from the sketches above, the machine is exceedingly like an Avro, and there cannot be any doubt that to Mr. A. V. Roe and his original triplane belongs the honour of first having made a machine of this type fly.

So far as the R.E.P. is concerned, the fuselage is exactly the same as that of the monoplane, and it is built of steel throughout as hitherto. The fuselage of this machine is of the lozenge section used in the original monoplanes, whereas in the later types of monoplanes the section is pentagonal in front and triangular aft of the pilot's seat. It is understood, however, that the new type fuselage will be used in the future biplanes.

An important feature about the machine is that, instead of being attached to upright struts, the inner ends of the upper main spars are fixed to the top of three triangular canopies, or pairs of converging tubes.

The wings have an area of 10 square metres, giving the machine a lifting surface of 40 square metres. Only eight uprights are used in the whole machine, the outer portions of the wing being treated as cantilevers, which, of course, they are in reality.

Apparently the idea of the machine is simply that, in case it may be necessary to carry greater weights, the same fuselage can be used for a biplane as for a monoplane, and this interchangeability might be quite useful for military purposes.

#### A Good Engine Test.

The following certificate of a two-hours' non-stop run of an E.N.V. 8-cylinder motor, on Wednesday, August 2nd, has been issued by the Royal Aero Club:—

Conditions.—The engine was fixed on a test bench and a Walker dynamometer was attached to the crank-shaft, the plates employed being 8<sup>1</sup>/<sub>2</sub> in. by 17 in. and the radii 11 in. The engine was cooled by water from a tank circulating through the jackets, pump, and radiator, and back to the tank. The fuel was gravity fed. The oil was gravity fed from a tank to the crank-chamber, and thence circulated by the oil-pump. No part of the engine, or its control levers, were touched during the trial, except the regulation of the throttle during the first two minutes.

Period.—The engine was started at 4h. 4m. 10s., running at 1,130 revolutions per minute.

At 4h. 6m. 20s. the throttle was shut down to give 1,120 r.p.m.

At 4h. 32m. 35s. the revs. stood at 1,140 r.p.m., which speed remained constant throughout the remainder of the run.

At 6h. 4m. 10s. the throttle was shut down, the engine having been run for two hours.

At 6h. 3m. it was opened and the speed accelerated to 1,200 r.p.m., the engine running at this speed till 6h. 6m. 50s., when the run was brought to a finish at the observer's request.

Performance.—By the power chart of the Walker dynamometer it is shown that the engine developed over 60 h.p. throughout the two hours' non-stop run, the actual b.h.p.'s being as follows:—

At 1,140 r.p.m., 64.3 b.h.p. At 1,200 r.p.m., 75.2 b.h.p.

Remarks.—The engine ran very satisfactorily throughout the test.

A. K. HUNTINGTON, Technical Committee.  
H. WAYMOUTH FRANCE, Observer on behalf of the Royal Aero Club.

HAROLD E. PERRIN, Secretary.

#### The Latest Pilots.

The following aviators' certificates were granted by the Royal Aero Club at the last meeting of the Committee:—

128. H. A. Petre (Hanriot).
129. William E. Gibson (Bristol biplane).
130. E. W. C. Perry (Valkyrie).
131. Eric Harrison (Bristol biplane).
132. S. P. Cockerell (Bristol biplane).
133. R. O. Crawshaw (Blériot).
134. R. O. Abercromby (Blériot).
135. Lieut. G. J. E. Manisty (Hanriot).



## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

## The Aerial Farce.

SIR,—As a reader of THE AEROPLANE, and a witness of the so-called "Aerial Post" at Windsor, I hope that you will allow me to state how entirely I concur with the opinions expressed in your article entitled "The Aerial Farce."

No one can be blind to the extraordinary progress of the aeroplane during the past eighteen months, and I am far from denying to it a future of very real utility in many departments. But it is ridiculous to suppose that when the utmost lightness is the *sine qua non* of flying an aeroplane will ever become the natural vehicle for the conveyance of heavy mails.

Had the aerial post been an unqualified success, it would only have demonstrated what everyone who is not an idiot already knows—that an aeroplane which can fly from Hendon to Windsor (an amazing to relate!) carry with it a few pounds of letters. The experiment would have been of no less significance had it carried a similar weight of ham sandwiches—save perchance from a philatelic point of view.

And was the post a success? As you state in your article, it served only to emphasise the weaknesses of the aeroplane.

We naturally associate with the Postal Department extreme punctuality of delivery, achieved by the most complex organisation. But, so far as I know, not one of the aerial mails have as yet arrived at the time at which it was expected.

I should be the last to wish any aviator to take unnecessary risks. But then he would do better not to enter into rivalry with the Post Office, thereby only exhibiting his own dependence on favourable circumstances, in ridiculous contrast with the absolute certainty and punctuality of the postal service.

So this is the "epoch-making event" boomed by the newspapers! When Stephenson's engine made its first journey it performed the function for which it was intended; but the aerial post, with which I have heard it compared, is engaged on work for which no intelligent person can think the aeroplane to be fitted, and is performing it in a way which would be laughable did it not tend to bring flying into disrepute.

Never has the Press expended its powers in puffing so useless an undertaking—useless whether from a practical or from a scientific point of view, and unsuccessful at that. "*Parturient montes, nascetur ridiculus mus.*"

A. C. HUNT.

Reading.

SIR,—Aeroplanes have come to stay; but it is not fair to the science to advertise that a certain project will be carried out at a certain time when the projectors of the movement have three machines, two of which are impossible to fly in a heavy wind, and the third is piloted by a man who has had hardly any experience of cross-country flying.

As it happened, outside assistance saved the situation and averted what would otherwise have been a fiasco, to say nothing of lowering the utility of aviation in the eyes of the public.

W. R. T.

Hendon.

[A large number of other readers of THE AEROPLANE have expressed similar, and in several cases much more forcible, views on the same subject.—Ed.]

## Controls.

SIR,—The various accidents which have from time to time occurred, due to insufficiency of control, or absence of any "spare" righting power, seem to me to point to the necessity for an arrangement in which the pilot's powers are better utilised than at present in the controlling of the machine.

As a regular reader of your excellent paper, I would like to submit to the criticism of your readers, and especially to that of those who are practical aviators, the following suggestion for an arrangement of controls. An ordinary type of steering wheel, universally jointed at its base, is connected up to the wing warpers, etc., in the usual way; a back and forward movement controlling the fore and aft stability, and a side to side the wing warping. This is, I believe, somewhat what

Mr. Farman calls "instinctive," for, should the machine dive, the pilot, leaning back (as one naturally does), pulls the wheel back with him, and in doing so lowers his tail (I mean his machine's tail) or raises his elevator, as the case may be, the operation being, of course, exactly the opposite should the machine incline upwards.

The same remark applies to the wing warping; the pilot, instinctively keeping vertical, pulls the wheel! up to him, and warps the wings in such a way as to bring her back to the normal position.

It seems, however, that a great advantage would be gained by having an additional wing-warping arrangement, so that pilots can cope with heavy gusts with less exertion. I therefore suggest that long pedals, one each side of the *cloche*, should be provided—the right-hand one to flex the right wing, and the left the left. Such an arrangement would enable the pilot to warp his wings to a far greater extent than by hand alone, and would save his arm a lot on a gusty day, especially when he was tired; it would, further, enable him to put his whole attention into dropping his tail at the right moment after a *vol plané*, since the foot balancing would soon become automatic.

In addition, a supplementary elevator lever, placed by his side, for use in much the same way as the side-brakes of a car, just used occasionally to remember it is there, might save trouble should the other control fail.

Such an arrangement of controls would not be difficult to operate, and would give a far greater control and sense of security than many of the flimsy devices at present in use—particularly on foreign machines.

Barnet.

H. N. CHARLES.

[The Nieuport uses pedals for warping, and a central tiller for steering and elevating, but it is questionable whether a pilot would easily get used to using the two systems alternately.—Ed.]

## Welsh Sportsmen.

SIR,—I enclose a copy of my letter of to-day to the *South Wales Daily News*. It refers to my second flight across the Bristol Channel on Sunday last. I should be glad if you would give publicity to it in your paper as a warning to other aviators contemplating visiting the Welsh Metropolis. I have the machine on exhibition here. Kind regards.

B. C. HUCKS.

Cardiff, September 13th, 1911.

SIR,—Since my last visit to Cardiff by way of the air I am impressed by the different manner in which people receive the new science of aviation. Earlier in the year,



Rest after Labour — James Valentine takes it easy at Ventnor.

# BLACKBURN MONOPLANES.

TUITION  
Exhibition Flights Arranged

The BLACKBURN AEROPLANE Co.,  
BALM ROAD, LEEDS.

## CLIFT AERO MAPS.

## Clift Aero Compasses.

For terms, write—ERIC CLIFT, c/o "The Aeroplane," 166, Piccadilly, W.

Used in the "CIRCUIT OF BRITAIN" and all Cross-country flights. Clift Maps were used by Vidart, Kimmerring, Valentine and others in the European Circuit, and by the majority of flyers in British Circuit.

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators. Necessities for the "CIRCUIT of ANYWHERE."

# £650

READY  
TO FLY

## THE Flanders Monoplane

(TWO OR THREE SEATS).

60-80 Green Engine ("Circuit of Britain" type).

50-60 miles an hour.

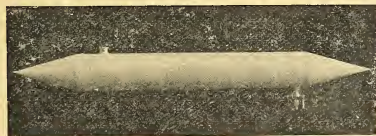
L. HOWARD FLANDERS, Brooklands, Weybridge.

# DAVISON

REMEMBER THIS NAME

When  
requiring  
Aeroplane

TANKS (in brass, copper, oxy-acetylene  
welded steel, or other metals,  
RADIATORS  
REPAIRS  
OXY-ACETYLENE WELDING



Best known manufacturer of these  
specialities in the motor trade.

Quotations free for oxy-acetylene  
:: :: repairs or other work :: ::

A. C. DAVISON,  
163, Arlington Road, Camden Town, London, N.W.



# 'AVRO'

## MACHINES for QUALITY.

A. V. ROE & CO., THE AVIATORS'  
STOREHOUSE,  
Brownsfield Mills, MANCHESTER.  
Flying Ground, WEYBRIDGE,  
Telephone—698 Central. Telegrams—TRIPLANE.

# AVIATION POSTERS

STRIKING IN DESIGN  
and  
CORRECT IN DETAIL

THE AEROPLANE, 166, Piccadilly, W.

Telegrams: "Aileron, London."  
Phone: 5407 Mayfair.



whilst flying cross-country from Hendon, I had occasion to make an unexpected landing at an early hour in the morning in the private grounds of the rectory at Barton (Bedfordshire). I was immediately received with the utmost cordiality by the rector, who at once had breakfast prepared for me, and with whom I stayed for two days as his guest. He took the utmost pains to assist me, sent his gardeners to help me with the machine, and even went to the extent of having a long length of iron fencing removed entirely in order that I might fly my monoplane away with less risk. I was much impressed by his kindness, and regarded him as a thorough sportsman as well as a rector.

The other case, by way of comparison, was my descent at Whitchurch (Cardiff) polo ground last Sunday morning, which, I ought to mention, was in no way pre-arranged, as I did not know my destination when I left Weston, but I told my manager there I would try to pick out a good field in the Cathays district. Several places were suggested to me, but I thought it best to decide after having had a bird's-eye view of them.

To my great surprise to-day a letter reaches me indirectly from the assistant secretary of the Cardiff and County Polo Club, the contents of which were, roughly, "How dare you land on the polo ground, and who gave you permission?" Well, sir, I have replied to this letter, not without being impressed by the difference between my sporting friend the rector and the sporting (?) club whose ground I unfortunately chose as a landing place. B. C. Hucks.

### The Question of "Centres."

Sir,—In referring to my letter which was an answer to a previous one of his own, *Ventre-à-terre* remarks that he "maintains that control of speed by means of horizontal rudder gives too slight a variation to be useful." Let me assure him that this is not so, and that with careful manipulation of said rudder and throttle the flying speed can be reduced by as much as twenty miles per hour.

As to his criticism of my statement in which I set forth broadly the correct lines on which all aeroplanes should be built, the very fact of him questioning my statement is sufficient proof of his lack of knowledge of "aerodynamics."

Even to the uninitiated it is obvious that the "centre of thrust" should be in line with the chief mass, and that since it is necessary for the C.T. to pass through the "centre of pressure" (were the C.T. placed below the C.P. an upsetting couple would be produced which would tend to make machine turn a somersault backwards, unless the tail be made to lift a portion of the total weight, which, of course, is out of the question in a "safety" machine; or if the C.T. be placed above C.P. the machine would not rise at all unless the elevator be well set for rising, or if C.G. be placed very low, which question is also not to be considered), it naturally follows that in a correctly built aeroplane the various components of gravity, pressure, and thrust all coincide as I have stated.

Whether or not a machine so designed would stand on its head when landing depends entirely on the design of the landing chassis. Such machines as the Antoinette, R.E.P., Roe, and Nieuport follow closely the lines I advocate, yet only with careless handling do these machines land badly. Neither A. V. Roe nor Nieuport have shown that a high-powered engine is not essential. Though the machines of both have made very good performances with a small amount of power available, the same machines could have done much better had they not been limited in this direction.

Since the aeroplane, if it is to ultimately enter into our everyday life as a regular means of carriage and transit, must outclass in every way the capabilities of our present systems, it is plain that, except in the case of small machines built for touring or sporting purposes, the horse-power of aeroplanes will tend to increase and will do so as rapidly as investigation and development show us the various directions in which the flying machine can be utilised as a vehicle of transportation.

It is impossible to say definitely the limitations of the aeroplane, but it is at least certain that when we have made it sufficiently efficient we shall find an enormous scope for it in the matter of passenger-carrying across country, mail work, and rapid over-seas journeys. Consequently it is evident that future development will lie not in the reduction of power but in the evolution of the aeroplane as a flying machine pure and simple.

May I add that there are such things as cylinder heads, fuel tanks, overhead wires and their supports, or "cabane," the upper half of pilot and possible passenger, directive fin,



B. C. Hucks taking his Blackburn apart at Cardiff.

and rudder, etc., which tend to nullify, if not extinguish altogether, the dragging effect of the landing arrangement, consequently raising the resistance centre to a level where it exercises little effect on the stability of the aeroplane! "*Ventre-à-terre*," please note!

ERNEST WARDE-FOX.

### More About Those Engines.

Sir,—I understand that in the Patrick Alexander contest one British engine ran the whole twenty-four hours. Has there ever been a run of that length by a Gnôme? [No! Not so far as is known.—Ed.]

I wanted to put in an engine that was not run by petrol and that would keep going, not for twenty-four hours, but as long as you kept it supplied with fuel—like a steam engine. However, the conditions demanded a full-sized engine, and that was above my limit, so I had to pass.

Maida Vale.

W. LE MAITRE.

Sir,—I am sorry to find from reading the two letters of Mr. Warde-Fox that he, like so many more Englishmen, seems quite content to assume that the Gnôme engine is the best in existence, and that no engine not made on those lines can be a success.

Of course, the Gnôme is a huge success at the moment, but, given the same opportunities for trying and developing their engines, there are many British designers who could eventually produce still better ones. In England we have comparatively few aviators and builders, and a number of these, whose chief ambition is simply to fly, slavishly copy the French, both as regard machine and engine, whereas they should consider the advancement of the science, and, incidentally, their pockets, and do all that is possible to produce something better than those now in existence.

Buying Gnôme engines, to my mind, is not furthering either the science or the business, as it is only helping to put off the day when an absolutely reliable and efficient engine will be produced. Until this is done, the aeroplane cannot become a commercial success. What is to take the place of the present type of engine is hard to see at the moment, but unless aviators and the manufacturers of aeroplanes make up their minds properly to test new designs of engines, the aeroplane business cannot develop.

I think the whole future depends on the absolute reliability of the mo/or. Whilst magnetos, sparking plugs, electric igni-



tion, float chambers, valves that may stick, water and oil pumps exist this is almost impossible to obtain, but in the meantime our engine designers and builders should have every encouragement to build and fit their engines so that, as time goes on, they will improve their productions and give us the perfect engine.

As things are at present, the brains of the country are being almost entirely wasted to the Englishman's love of running down his own country's goods and praising and using those of other nations.

Lee-on-Solent.

ERIC H. CLIFT.

#### Aeronautical Research.

Sir,—May I avail myself of the publicity of your columns to make it known that, owing to the generosity of Mr. P. Y. Alexander and of the Governors of the East London College, the aerodynamical laboratory in that college will again be open for experimental research during the winter?

The Council of the Research Society would gladly welcome a few gentlemen desirous of experimenting. Application for admission to the society should be made to the hon. secretary.

R. H. WALTERS

(Hon. Sec., the Aeronautical Research Society,  
East London College).

#### Lost, Stolen, or Strayed.

Sir,—A few days ago I lost a model monoplane, bearing my name and the number, "B.F.H. 10a," in the neighbourhood of Amherst and St. Stephen's Roads, Ealing. Should any reader of THE AEROPLANE find the model, would they kindly let me know at the address below? The model is a twin-propeller machine of 17 in. span by 30 in. long.

39, Amherst Road, Ealing, W. B. F. HUSSEY.

#### The Aeroplane Section, R.E.

"No. 1 Aeroplane Section, R.E.," as it is now called, made its reappearance on "The Plain" on the 5th inst. Previous to the 5th it was sent fully equipped with six aeroplanes and various spare parts to the proposed army manoeuvre area in Norfolk and Cambridge respectively, but was not put into any practical use in working with an army corps, as the army manoeuvres were cancelled.

At present there are four officers (certificated pilots) and approximately twenty-six rank and file encamped about a mile from the sheds on the Plain. Lieut. Stewart Hynes is still in France, receiving tuition on a Bréguet, which the War Office has purchased; he is also a certificated pilot on a Blériot.

Two more permanent Government aeroplane sheds are in course of construction on the Plain, and it is hoped to have them completed in about five weeks' time, making a grand total of seven sheds.

It would be interesting to know by what Army Order the Air Battalion, recently formed as a separate organisation, is now known as a mere Aeroplane "Section" of the Royal Engineers. No one can have greater respect for the Sappers, in their proper sphere, than has the writer, but it will undoubtedly be found that if the Air Battalion be merged into the Engineers it will become quite interesting for purposes of scientific investigation, as, indeed, was the old Balloon School at Farnborough, but it will never have the same fighting spirit as it would have if it remained a separate regiment into which had been grafted the composite qualities of artillery, cavalry, and infantry.

#### Things Done Better in France.

Lieut. Loder, who was injured in an aviation accident not long ago, has been decorated with the Cross of the Legion of Honour while in hospital at St. Cyr. We have not yet heard that the D.S.O. has been awarded to Captain Maitland or Captain Burke for injuries received in their country's service.

#### Liverpool Model Aero Club.

Held a good meeting to-day, about 10 models competing. No flying for Harrison prize. A. G. Pugh completed tests for his model certificate and obtained the first issued by the club, with a single-screw monoplane. Prize offered for next week; will members please note? A hearty welcome will be given to members of other clubs.

ALEX. GAIN and PUGH, Hon. Secs.

#### Blackheath Aero Club.

Successful meeting held on September 9th. Remarkable flights by Messrs. Hunt, Deltile Clark, and Rippon. Will members please note, following dates? Thursday, September 21st, 7.45 p.m. till 10 p.m., Illuminated model flying. Saturday, September 23rd, 4 p.m., risist from ground competition. Meeting at the usual place each date. Model makers invited to bring machines and enter above competitions. No entrance fees. All inquiries to Hon. Secretary, 5, Limpsford Road, Nunheath, S.E.

#### Conisborough and District Aeroplane Society.

On Wednesday, September 13th, it was decided at a meeting of the above to hold another flying meeting on Saturday, October 7th, when numerous prizes will be put up for competition. Whilst staying at Filey B. Clarkson one of our members had the good fortune to have a flight in one of the Blackburn monoplane there. He was also at the hangars near Filey whilst wing-seeing some very fine flights and gaining a lot of useful information and practical experience.

T. S. WALLIS (Hon. Sec.).

#### Birmingham Aero Club.

On the 16th, at usual weekly competitions, Mr. E. Tryke succeeded with large 602 model in getting flight of 34 secs. duration. Time was carefully noted by Mr. B. W. Beeby in presence of other club officials. The Rt. Hon. Lord Norton has accepted Vice-Presidency of club with intention of developing exhibition flights at Billesley Farm and of forcing aviation more to fore in Midlands. Mr. G. H. Wood, enthusiastic pioneer of Glider construction in club, has been offered and accepted an appointment with the Bristol Biplane Company. He, like Mr. Noble, however, announces his d termination to still stick to club. R. COBHAM and F. A. THOMPSON (Joint Hon. Secs.).

#### The Aero Models Association

(Northern Branch) will hold an Open Model Flying Competition at Vivers and Sons' "Lodge Dairy Farm," Bishop's Avenue, East Finchley, N., on Saturday, September 30th, at 3 p.m. There will be two competitions:—(1) for models rising from the ground and once reaching ground to count; no limit as to weight or size of machine; (2) for models flown from starting point to a post 200 yards distant, the winner being the model to land nearest the said post; (machines to have not more than 2 square feet of surface area). Prizes:—Class 1, first prize, £5; 2nd, £3; 3rd, £1.5s. 6d. Both prizes have been kindly presented by the Earl of Ronaldshay. M.P. Entrance fees, members, 6d.; non-members, 1s. Latest date for entries, Friday, September 29th, 10 p.m. Applications to be forwarded to Mr. Malcolm B. Ross, Hon. Secretary, Aero Models Association (Northern Branch), 15, Highgate Avenue, N.; or to the Secretary, Aero Models Association, c/o A.A. and M.U., Caxton House, Westminster, S.W.

#### Brighton and District Model Aero Club.

The Brighton and District Model Aero Club has been founded a month or two, but a fully equipped workshop has been acquired, and on Saturday 16th last they held a very successful competition in Hove Park. Many entries were received and an afternoon's excellent flying was witnessed. Two prizes were presented. The representative of the Automobile Accessory Company, whose model flew 682 feet, took first prize, with Mr. Willis, of Hastings, runner-up with 512 feet. Mr. Willis flew a twin-screw Mann Monoplane, of which his firm are the sole makers.

After the competition some flights exceeded the winner's distance, Mr. Willis's Mann Monoplane making a duration flight believed by many to be a record for duration, for the timekeeper, Mr. Charles Barnett, Hon. Sec., who pursued the watch in his hand, lost sight of it after sixty seconds.

The success of the maiden meeting has made members very enthusiastic, and a duration competition will be held, weather permitting, on Saturday, 30th September. Entrance fees of 1s. must accompany all entries. A notice of notification must reach the Hon. Sec., 41, Preston Street, on or before Friday, 29th. A full-sized biplane glider is in course of construction, and an excellent gliding ground on the Sussex Downs has been acquired. Altogether the Brighton Club is flourishing strongly.

#### The Visitors' List.

Baron de Roenne was exceedingly interesting on the subject of dirigibles, especially in his opinions of the Naval dirigible at Barrow. He made one quite good point in favour of dirigibles in general, namely, that if one builds a large liner one does not expect it to land its passengers and cargo at any casual point along the coast. It must be docked in a proper port prepared for it, and he holds that the same argument applies to dirigibles, namely, that we must not expect them to land anywhere and everywhere as aeroplanes do, but only in certain places where proper tackle is provided for handling them. His proposed transatlantic dirigible will have when it is built fifteen engines of something over 100 h.p. each; it will be about 600 feet long, and about 72 feet in diameter. He pointed out that the Zeppelin passenger machine, the Schwaben, has been making two trips a day regularly since the beginning of August, taking up twenty-four passengers per trip at £10 a head, though he admits that these trips were done in the early morning and late in the evening, under most favourable weather conditions, and that its speed is only about 30 miles an hour, so that it cannot face any serious wind. Certainly, purely for pleasure purposes the dirigible has a really fine future.

Mr. D. Graham Gilmour came in a day or two after his remarkable flight from Salisbury to Bristol on the new Bristol monoplane, to say how much he liked the machine, and how admirably it handled. He pointed out that for an experienced pilot the balanced rudder and elevator give absolute control under all circumstances, and that, though the machine is extremely sensitive, it is nevertheless very easy to handle, because the rudder and elevator are so cleverly balanced. He said it was purely a matter of luck that he saw the city of Bath after missing Devizes in the fog, and that when he set out there was a good deal of mist about. The flight is the more remarkable because from Bath to Bristol he had

the wind dead ahead, and from the Plain to Bath it was sideways, from which one may assume that the speed of the machine in still air will be something close to 80 miles an hour. Although Mr. Gilmour is such a magnificent flyer of a biplane, it must be remembered that he took his certificate on a monoplane, and has done some excellent flights on the faster machine, so one may expect to hear considerably more of him as a monoplaneist in the future.

Captain Oswald Watt, of the Australian Army, who took his certificate recently, called to talk over the possibilities of aviation in Australia. At present the only flying done there, besides Mr. Duigan's short flights, has been done by the Bristol Company's pilots, purely for demonstration purposes, and Captain Watt, as an officer of the Army of the Commonwealth, hopes in the course of the next few weeks to take a machine with him to Australia, and to endeavour to form the nucleus of an Air Battalion for Australia's defence. He himself has the makings of a very fine flyer, and deserves every success in his patriotic efforts.

Mr. S. F. Cody gave THE AEROPLANE some very interesting particulars about the work done by his new machine this year. The machine has travelled, all told, close on 2,000 miles already. In the course of the "Circuit of Britain" he covered altogether about 1,300 miles, through going round the coast line. His first attempt for the Michelin Cup, when he missed Andover and went down to Southampton, amounted to 118 miles and a bit. His second attempt, when he was brought down for lack of petrol 31 miles from home, came to 121 miles and a fraction. His third attempt, when his engine stopped, was over 11 miles, and his fourth attempt was just 125 miles, making about 377 miles in this competition alone. Besides this, he has covered another couple of hundred miles flying round and about Laffan's Plain and at Brooklands. This is really quite a splendid record for a machine which only came out for the first time late in June, and makes one marvel more and more why it is that the British War Office does not acquire at least one specimen of the Cody machine, for even the most experienced constructors can learn quite a great deal in plane design and construction from it. There is a sort of general idea that because Mr. Cody chooses to fly low, as a rule, his machine cannot climb. As a matter of fact, the writer has seen him up well over 2,000 feet, and his barograph records show that he was over 7,000 feet in the course of the "Circuit"; also on many occasions he has been well over 3,000 feet. The most remarkable feature about the Cody machine is the way it flies in a bad wind, keeping not only its stability, but its actual level in the air in a most remarkable manner, when compared with biplanes of the lifting-tail type. It should be noted that all Mr. Cody's remarkable flights this summer have been done with the Green engine, but it is his intention, after the Michelin Cup competitions are over, to experiment with an Austrian-Daimler engine of 120 h.p., and see what his machine can do in the way of pure speed with big power on it.

Mr. Percival, pilot of the Billing biplane, more commonly known as the "Oozeley Bird," described an interesting experiment which he and Mr. Billing have been trying on his machine. Being of the opinion that the planes had too much camber in the ordinary way, they have placed small supplementary ribs underneath the main ribs, which have hardly any camber at all, and practically form a chord to the front portion of the old ribs. These have been covered with fabric, making the planes double-surfaced for nearly half their chord. The result has been a great improvement in the flying capacity of the machine, and if it only had a modern engine, would probably fly quite well. Still there is the consolation about it that if it smashes up it is about as safe a machine as one could have, for the pilot is a long way behind everything, and the chassis struts are so high that there is quite a large amount of wood to crumple before the pilot is damaged.

Mr. Howard Flanders, justifiably pleased with the trial flights with the Flanders monoplane, called to discuss courses for the Michelin cross-country prize. During the past week the machine has been doing exceedingly well, piloted by Ronald Kemp. The balance of the machine is now so perfect that Kemp has been doing circuits for a quarter of an hour at a time without using the wing war at all, and the machine seems able to climb to any extent without the necessity of opening the throttle on the 60-80 Green engine which is fitted. She also seems quite stable longitudinally, but for the fact that if the pilot lets go of the wheel altogether the machine climbs steadily, and the cause of this has resulted in several interesting arguments in the Flanders camp. The tail of the machine is as nearly non-lifting as it can be, without giving it a negative

lift, and it is certainly not in any degree tail-heavy. Consequently some were inclined to the belief that the down draught from the main planes had a tendency to depress the tail in the manner indicated in the article on "Side-Slips" last week, but it now seems to be agreed that what actually causes the tail to drop and the machine to rise is the fact that rather more than half of the control wheel projects above the covering of the fore part of the fuselage, and consequently the slip stream from the propeller drives the wheel back, and so lifts the elevator flaps slightly. The effect is evidently very slight, because Kemp says he can hold the wheel up to its work practically with one finger. In the course of a test flight on Wednesday morning Kemp took the machine up, and as soon as he was clear of the ground let go of the control wheel altogether. The machine climbed steadily to 700 ft., when, unfortunately, one of the high tension ignition wires came adrift, so, to avoid shaking the engine up too much, he switched off altogether, and came down *en vol plané*, the total time from quitting the ground to landing again being four minutes. This week the machine is being taken to pieces, and everything is being overhauled in detail, including the engine. It will then be put together again, and attempts will then be made on both the Michelin cups.

Mrs. Hewlett called, on her return from Plymouth, to give further details of the unpleasant experience the Blondeau-Hewlett firm had had there. It appears that, by borrowing Mr. Snowden-Smith's engine, M. Blondeau's machine was ready to leave Weybridge on Wednesday, but was not fetched away till Saturday night by the persons who had contracted for its transport. By working hard from 5 a.m. on Monday, the machine was ready to fly in the afternoon, and M. Blondeau did some excellent trial flights over the very dangerous ground round the landing place. The next day a valve spring went wrong when the machine was actually running under its own power to the starting point, and while this was being put right, an operation which could only take a quarter of an hour or so, the crowd were incited to create a disturbance, and in consequence Mrs. Hewlett handed the cheque back to the promoters, and the "gate-money" was returned to the public, a course which apparently was all to the advantage of the promoters in that, owing to the ground being visible from outside the enclosure, the "gate-money" could hardly have covered the fees to the aviators, so many people preferring to stop outside. The matter is likely to be heard of further in the Law Courts, and, therefore, one must refrain from comment. After the crowd had left the enclosure, M. Blondeau made four excellent flights and carried two passengers. The local Press is entirely in sympathy with Mrs. Hewlett and M. Blondeau, who certainly deserve far better treatment than was accorded to them.

Messrs. Hamel and Greswell came in to discuss the question of the Aerial Post. Suffice it to say that the views of THE AEROPLANE on the Aerial Post, as such, are in no way changed, though at the same time it is a pleasure to be able to congratulate both these fine flyers, and Mr. Driver, on having made really excellent cross-country flights under very adverse weather conditions—flights which were worthy of a far better cause.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AILERON, London.

Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates—

UNITED KINGDOM				ABROAD			
	s.	d.			s.	d.	
3 months, post free	1	8		3 months, post free	2	9	
6 " " " "	3	3	6	" " " "	5	6	
12 " " " "	6	6	12	" " " "	11	0	

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.



## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate — 18 words **1/6**; Situations Wanted ONLY — 18 words **1/-**. 1d. per word alter.

### PATENTS.

**AERO PATENTS.** Inventors advised by first-class aero experts and taught flying, their inventions secured, manufactured and tried in the firm's own works, flying grounds and aeroplanes. Book of Instructions post free on mentioning this paper. W. P. THOMPSON & Co., Chartered Patent Agents and Aero Experts, 6, Lord St., Liverpool, and at London, Bradford, Birkenhead and Freshfield.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS.

**THE AEROPLANE** will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to THE AEROPLANE, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

### MACHINES.

**HANRIOT MONOPLANE**, "Libellule" Racing type, complete with Engine. 56-60 m.p.h. New with spare wings £750. Any reasonable offer accepted. Apply to THE GENERAL AVIATION CONTRACT CO., 30, Regent Street.

**FOR SALE**, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**MACHINES**.—"Avro" Biplane, new, with 30 H.P. Green, £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**FOR SALE** without reserve—45 H.P. Monoplane, new and tested, will sacrifice fair offer, cost £900. Also 40-50 H.P. Jap 8-cylinder engine and propeller, etc Apply Box 333, THE AEROPLANE.

**MILITARY** type Farman, Gnome Engine, cases and spares for sale, price £650. Instalments accepted from responsible purchaser. Apply Box 334, THE AEROPLANE.

### ENGINES.

**FOR SALE.** Genuine Antoinette engine, complete, in thorough working order. Also Humber 3-cylinder aero engine. Manager, Portholm, Huntingdon.

**50-60** H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—THE AEROPLANE.

### PROPELLERS.

**PROPELLERS**.—"Avro" Propellers of proven efficiency 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best, Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### TUITION.

**TUITION**, with or without limited liability, Blériot XI.; personal instruction.—CHANTER, Aerodrome, Hendon.

**TUITION**.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. More certificates have been secured on the AVRO than on any other "All-British" Aeroplane. — A. V. ROE & Co., Brownsfield Mills, Manchester.

### TUITION.—Continued.

**L**ANARK AERODROME, N.B. Tuition for R.Ae.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

**B**ARKHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barhead.

### INVESTMENT.

**A**NYONE investing £250 to £500 can take active part in Lancashire Aviation School now forming.—Write Box 336, THE AEROPLANE, 166, Piccadilly, W.

**A**ERONAUTICAL Business for Sale, established three years, including two full-sized biplanes that have flown (British designed, patented) and patents for Control Lever, Automatic Stability, Brake, Disappearing Wheels. Well equipped works and flying grounds. Price £3,000 part cash.—MALLOW & Co., Adelphi House, Strand, London, W.C.

**G**OOD Business in Models and Aeroplane Parts for Sale, in Midland town. Excellent connection. Owner moving to London. Replies to Box 336. THE AEROPLANE.

### MISCELLANEOUS.

**P**LANES, LIMITED, Duke St., Birkenhead.—Monoplanes guaranteed to take purchaser as passenger 30 miles flight before delivery. 60 H.P. Green engine, 60 H.P. Isaacson, 30 H.P. Anzani, and 120 H.P. Delahaye on stock for aeroplanes and motor boats. Purchasers taught flying by Aero Club pilot. Hangars to let.

**H**ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**E**TRANGERS, qui aimez la langue française et l'aviation abonnez-vous à

### LA FEUILLE SPORTIVE

2 fr. par an, France; 3 fr. par an, Etranger. Directeur: M. Gache, Professeur du Lycée Carnot, 5, Rue Salneuve, Paris.

**P**HOTOGRAPHS.—Original photographs of most of the illustrations in THE AEROPLANE can be supplied at short notice, half-plate size 1s., postcard size 6d., from THE AEROPLANE, 166, Piccadilly, W.

**P**OSTERS.—To promoters of exhibition flights; aviators giving exhibitions on their own account; aerodrome proprietors, &c.—Striking posters in large and small sizes can be supplied in a day or two by arrangement with THE AEROPLANE, 166, Piccadilly, W.

### SALE AND EXCHANGE.

**E**VERYBODY'S CONVENIENCE SUITED. Genuine bargains. Send for weekly list of Aeroplanes and Engines. Cheapest on the market, sale or exchange.—WESTON HURLIN & Co., P.F. Building, 13, Milford Lane, St. and.

### FLYING MODELS.

**"M**ANN" MONOPLANE. Have you a tired, slack feeling, and do you feel that life offers no further joys to you? If so, buy and fly a "Mann" Monoplane and you will once more wear that "Sunny Jim" kind of look. Have you ever bought a German-made dart, and do you scoff at all models because the wretched 6½d. thing would not fly? If so, buy a "Mann" Monoplane, and after you have seen it fly the quarter-mile you will or ce more believe in the possibilities of aviation. Five hundred sold in seven weeks. Every model is guaranteed to fly 440 yards in 60 seconds. "Mann" Monoplanes, 15/-; parts for constructing, 5/-; geared winders, 6/-—From WILLIS BROS., 14, Willington Square, Hastings.

**L**OOK OUT! NO TRASH. 6/-, complete with geared winder, ¼-mile Monoplane, prize winner. Send stamp for list of cheapest accessories and model materials.—WESTON HURLIN, 13, Milford Lane, Strand.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, SEPTEMBER 21st, 1911

No. 16

## "BRISTOL"

### Flying Schools

AT

SALISBURY PLAIN and BROOKLANDS

. . . POSSESS . . .

The Best Equipment

The Finest Instructors

AND

The BEST RECORD

:: IN THE COUNTRY ::

Pupils are taught, not merely to fly, but also how to assemble and adjust their machines and motors.

RAPID AND THOROUGH TUITION IS ENSURED  
AND THERE IS NO WAITING FOR MACHINES.

SPECIAL TERMS TO NAVY AND ARMY OFFICERS.

Write for particulars to—

**The British & Colonial Aeroplane Co., Ltd.,**  
**FILTON, near BRISTOL.**

"THE AEROPLANE," SEPTEMBER 28, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.

THURSDAY, SEPTEMBER 28th, 1911.

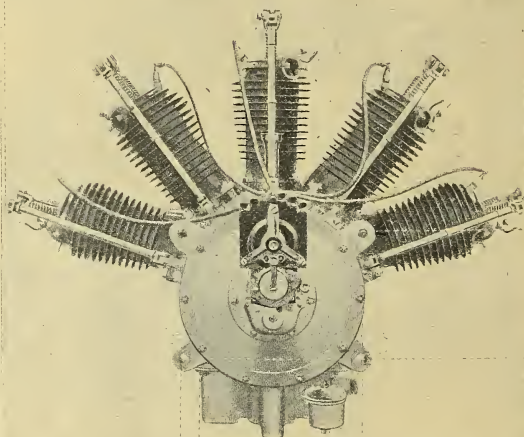
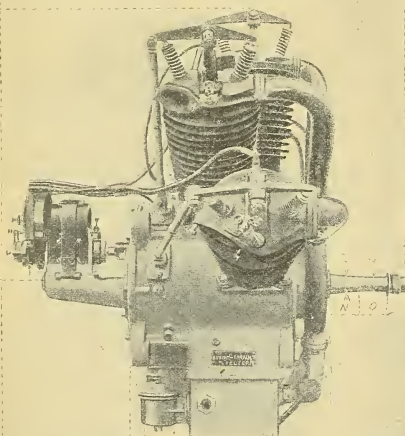
No. 17

## The Aerial Tourist.



James Valentine on his racing Deperdussin. Not content with doing the "Circuit of Britain" on this machine, Valentine is now engaged on a "Circuit of the Aerodromes" on his own account.

# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40.50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS...	387	"WIRELESS" ON AEROPLANES ...	398
THE AERIAL FARCE (SEQUEL) ...	390	THE VENDÔME MONOPLANE ...	399
AIR CURRENTS ...	392	THE ADAMS ENGINE... ..	400
"THE CRAZE," BY M. L. E. ...	394	CORRESPONDENCE ... ..	401
THE WEEK'S WORK... ..	395	THE VISITORS' LIST... ..	405

## Editorial Opinions.

## Home Industries.

On a variety of occasions the writer has pointed out the advisability of supporting home industries as much as possible, always provided that the home-made article is as good as any to be obtained abroad. Mr. Clift's letter, which appeared last week, is one of many which show that others realise that, if this country is to do any good in aviation, those who are at present engaged in the industry in one way and another must have support.

Certain men in close touch with aviation were discussing this same subject recently, and a rough estimate was then made of the amount of British money which has already gone abroad in connection with aviation.

Something like seventy-five complete machines have been imported from France in the last eighteen months. Some of these, it is true, cost only about £500 or £600, but the majority of them cost £1,000, and some of them considerably more, so that the complete machines alone would account for approximately £75,000. To this must be added spare parts, material for repairs, and so forth.

Most of the purchasers of foreign machines spent a great deal of time at various French aviation schools learning to fly, and not only did most of them live in a much more expensive manner abroad than they would have done at home, but in almost every case they have been grossly over-charged for repairs when they have broken school machines. Some of them, sad to relate, have sought to recoup themselves by gambling at the local casinos, and the writer can account for at least £3,000 left in France in this way. Then, of course, there were heavy school fees as well. So between repairs, living expenses, school fees, and sundries generally, the total may be brought up to about £100,000.

Besides this, Paulhan won the first £10,000 prize, and also the £1,000 cross-country prize; de Conneau won the second £10,000 prize; all the prize money at Doncaster and Blackpool, most of that at Bourne-mouth, and a goodly share of it at Lanark went to foreign aviators. So that, adding on appearance money and expenses, probably another £35,000 can be accounted for in this way.

Beyond all this comes the purchase of engines. One firm alone must have purchased somewhere about fifty foreign engines, and probably another fifty or so have been brought into the country at one time or another, so that the import of engines alone, apart from machines, must run up to close on £50,000.

Taking it all round, it is not far wide of the mark to say that a solid £200,000, put up in one way or

another for the purposes of aviation, has gone out of this country in something like eighteen months. If half that sum had been intelligently spent in improving British aeroplanes and engines this country might have been the leader of the world in aviation to-day.

In last week's AEROPLANE a passing reference was made to the effect that the Army Air Battalion is now publicly as well as officially known as the Aeroplane Section, R.E. From information since received it would appear that the Army Air Battalion, of which so much was hoped, never has been anything else officially but a section of the Royal Engineers, just as the old Balloon Section was merely a section of the same establishment.

When the formation of the Air Battalion was first announced it was hailed with delight by all and sundry, in spite of the fact that its headquarters were to remain at Farnborough, because it was thought that, as a separate battalion, it would be independent, and so would be free from those trammels which seem ever to beset anything which comes under the administration of senior officers of Engineers; and it was thought that the Air Battalion might thus develop, so to speak, a personality of its own.

Every branch of the Service seems to breed different characteristics. One can hardly ever mistake an infantryman for a cavalryman, or *vice versa*, and most people know the stock story of the irate cavalry colonel who rebuked an unfortunate subaltern with the stinging phrase, "Sir, you sit your charger like an infantry major."

No doubt the Artillery have some equally cutting remark which applies to the cavalry, and, of course, Kipling's line, "Our colonels are Methodist, married, or mad," is simply a literal transcription of a military axiom applied by all other branches of the Army to the unfortunate Sappers.

Sad to say, there is only too much ground for the less, unkind as it is, and the reason is not far to seek. Engineer officers are the men who have passed out of Woolwich highest in their year. Consequently, there is always the probability of their being so steeped in mere book-lore that they are lacking in those human qualities which go to make a good practical everyday soldier. Further, the Engineers' mess at any military station is usually a very small one, and the members thereof do not live the same gregarious life as do ordinary regimental officers. In consequence, they are apt to become self-centred,

bookish, and, only too often, narrow and old-fashioned as they get towards middle-age. So marked are these characteristics that when one comes across an Engineer who is also a sportsman one is almost bound to hear someone remark, "You would never take him for a Sapper," and occasionally some kind friend explains him by adding, "But then he passed out of the Shop low down in a bad year."

Unfortunately, those who pass out high up in a good year are the men who get the first-class staff jobs, and eventually rise to permanent billets at the War Office, where they become Directors-General of Ordnance or occupy other important posts where they are in a position to make or mar any new system, arm, or idea which may be introduced or advocated by men who, though probably their juniors in rank and length of service, have twice their knowledge of the needs of an army on active service, and ten times their ability to comprehend the fact that an army operating under obsolete conditions is beaten before it ever takes the field.

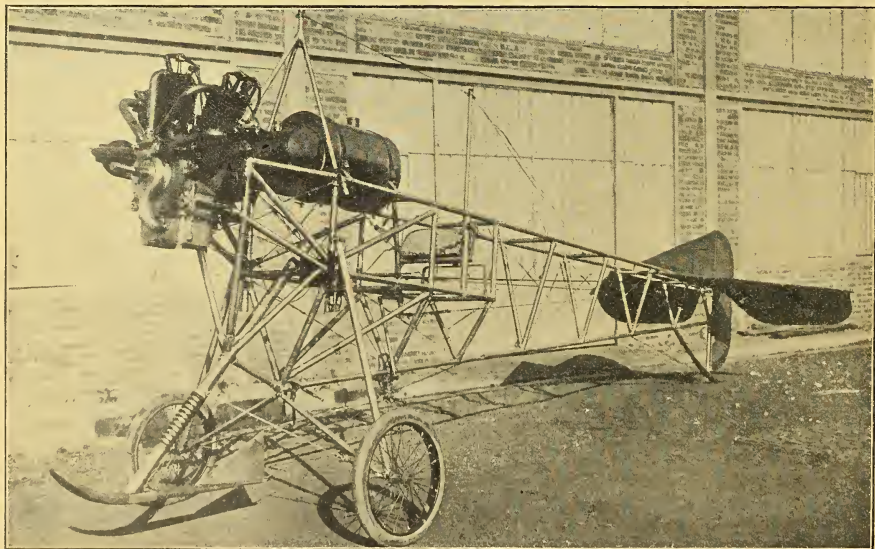
Our War Office to-day is quite well staffed with men of all ranks and of all arms who realise thoroughly that a modern army must have hundreds, and even thousands, of air scouts. They know that proper high-speed motor transport must be provided for the various sections of the said air-scouting force. They know that not only France, but Germany, Austria, and Russia, already count their officer-aviators by dozens where we have a bare half-dozen all told. Yet all progress in this country is being held back because one or two senior officers of Engineers, who should already have retired under the regulation age-limit, are unable to comprehend modern needs, and use all the weight of their positions and seniority to prevent the Air Battalion from becoming, as it should be, absolutely independent.

The pretence seems to be that because the aeroplane is a mechanical contrivance therefore it belongs by rights to the Engineers. As well pretend that because guns are mechanical, therefore horse, field, and garrison guns should all be merged into the Engineers. Air-scouting is a fighting man's job, not a theoretician's, and a special breed of fighting man's at that. The air-scout in the next war is going to be something of the same type as the men who used to lead forlorn hopes in the days when fortresses were stormed with hand-grenades, and he is going to have somewhat of the spirit of the hard-riding cavalry leaders of the past, a kind of Prince Rupert, Murat, Stewart, or Phil Sheridan. The one thing he is not going to be like is the typical Sapper Officer who wants to work out everything by formula.

Give our Air Battalion independence. Fill it with artillerymen—who have all the science that is needed, and some to spare; with cavalymen and guardsmen, to give it dash and quality; with infantrymen, Irish and Scottish for choice, for solidity and method; let it have even a leaven of engineers, so long as they are caught young, before they have become bound up in red tape and theory. Then we shall have the finest corps of air scouts in the world.

But, keep it tied up to the Royal Engineers as a mere section, and we shall have a hide-bound, unenterprising, unsoldierly, unprogressive set of theoretical experimenters, as useless as the old Balloon Section and as futile as the Army Aircraft Factory.

The rank and file of the Royal Engineers are magnificent, as the writer knows from experience of the men and their work. The junior officers have, in many cases, the makings of splendid flyers, and are, personally, of the very best. But Heaven preserve the Air Battalion from the clutches of the Senior Officer of Sappers.



The Fuselage, etc., of the R.E.P., one of the best machines in the world, from the engineer's point of view, and certainly one of the best flyers.

# E. N. V.

## ALL-BRITISH AVIATION MOTORS

Made in Three Sizes, viz. :

35 h.p.	*60 h.p.	100 h.p.
---------	----------	----------

\* Winner of Baron De Forest Prize of £4,000---1910.

The E.N.V. Syndicate, Ltd.,

4, HYTHE ROAD, WILLESDEN, LONDON, N.W.

'Phone : 125 Harlesden.

Telegrams : "Evotsyn," London.

# HOWARD T. WRIGHT


 110, HIGH STREET,  
 MANCHESTER SQUARE, W.
 

Telephone  
8574 GERRARD.

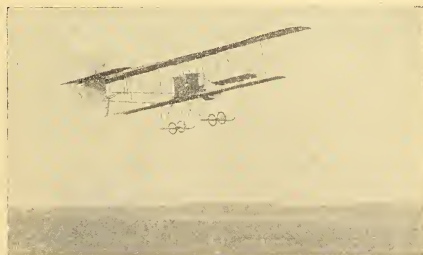
Eight Types

## Monoplanes

From **40** to **80** miles per hour

## Biplanes

From **36** to **50** miles per hour.



Catalogue on Application,

Winner of De Forest Prize



## The Aerial Farce and its Sequel.

Last Friday several papers made known the fact that there was some trouble about the transport of the last few bags of the so-called "Aerial Mail" from Hendon to Windsor, in that Mr. Gustav Hamel had refused to carry them, and, as no one else was available, matters had arrived at a deadlock. The facts of the matter may as well be made known, for they reflect great credit on Mr. Hamel.

It has been widely advertised that something over 150,000 letters and postcards, at 1s. 1d. and 6d. each respectively, have been sent from the various collecting boxes, and in consequence there must obviously be a profit of some thousands of pounds to the promoters of the scheme, over and above the cost of the cards and letters, but there is absolutely no authority to decide what is and what is not chargeable as "expenses."

The writer has it on the best possible authority that Messrs. Greswell, Driver, and Hubert were only to be paid £5 a trip for their share of the work, or about 3s. a mile, which is absurd for a journey of 34 miles over very bad country. The proprietors of Hendon Aerodrome undertook the necessary organisation of the despatching and handling of the mail-bags at a commendably low figure, in view of the fact that they were under the impression, albeit a mistaken one, that they were helping to popularise aviation. Also they hoped, presumably, to recoup themselves, in part, out of their own gate-money. And Mr. Hamel, pressed into service at the last moment to save the promoters' faces, good-naturedly consented to do part of the work at a fee far below that which he could command for a little exhibition flight in the country, instead of "putting on the screw," as he might have done. Further, all the handling of the "mails" has been done free of charge by Post Office officials.

As a result, the total legitimate expenses of the whole affair cannot be more than a few hundreds of pounds, thus leaving some thousands clear profit.

Now one would naturally think that, after Mr. Hubert's sad accident, due entirely to the impurity of someone connected with the absurd scheme, the first idea of the chief promoters of the scheme would be to make Mr. Hubert some adequate recompense. Mr. Hubert is entirely dependent on flying for his livelihood. His family, though genteel, are not well off, his father being a hard-working doctor. He himself does not come under the Employers' Liability Act. And, consequently, unless something is done for him, he is likely to have a very hard time when he is well enough to

leave hospital, but still not well enough to earn his own living.

Under these circumstances, it seems obvious that the promoters of the scheme, which has possibly crippled him for life, should hand him a sum which will relieve him of all anxiety.

Yet, in last Friday's *Daily Telegraph* we find one of the promoters of the affair saying that his "Committee"—who is there on this "Committee" except himself and his fellow-promoter?—"had no power to make any such payment, and in any case could not do so without consulting the Postmaster-General. At the same time the Committee hoped the public would do something for Hubert." That, of course, was mere futile verbiage, and Mr. Hamel recognised it as such by simply refusing to make any more flights till it was assured that Mr. Hubert would be adequately recompensed.

This assurance has now been given in the form of a letter from the promoters to Mr. Hamel, promising to make a special representation to the Postmaster-General that £500 be paid to Mr. Hubert. The Postmaster-General can scarcely refuse to sanction that payment, but it is hard to see why even this delay should be necessary, seeing that owing to the elasticity of the term "expenses," the promoters would be quite within their rights in making the payment on their own responsibility.

Mr. Hamel himself had contracted to carry sixteen bags of mails, and by Friday he had carried the sixteen, but it was argued that the bag carried by him on the first day of the so-called "Post" did not count, consequently on Saturday last there was still one bag left for him to carry under his contract. Fortunately for his position in the matter there were three bags waiting at Hendon, and he took up the strong position that he would carry one of them, in his own good time, according to contract, but that if he carried the other two he would only do so on behalf of his friend, Mr. Hubert, and that his price for doing so would be £500, in the form of a cheque made out to Mr. Hubert.

The promoters of the scheme are morally, if not legally, liable for Mr. Hubert's accident, and if they could not, as they allege, pay that £500 out of the "expenses" of their precious "Aerial Post," then they are, if they have any sense of decency, bound to pay it out of their own pockets. It is not a matter for public subscription. The public, in childish play, bought the cards and letters and "posted" them, but they did not goad men on to fly in dangerous weather over bad country. The responsibility is on the promoters, so it is up to them to make good.

### Exit the "May Fly."

On September 24th the alleged "dirigible," built at a cost of something like £100,000 to designs of some unfortunate naval men at Barrow-in-Furness, made its second public appearance. It was floated out into Cavendish Dock, and those in charge, doubtless made overbold by its already long life (as the lives of dirigibles are reckoned), attempted to turn it round, whereupon it "burst asunder in the midst." THE AEROPLANE pleads guilty to a certain satisfaction at this result, which was practically foretold in its pages some months ago. Nevertheless the editor tenders his sincere congratulations to Captain Murray Sueter and his assistants on having had the distinction of being attached to an "airship" which has remained in one piece for so long a period. But, as a mere taxpayer, he would like to know how he has benefited by the work of those doubtless excellent officers.

### The "Coupe Femina" Changes Hands.

The Femina Cup, held lately by Mme. Jane Herveau on her Blériot, changed hands again on September 12th, when it was won by Hélène Dutrieu, who covered 230 kms. on a biplane in 2 hr. 45 m., averaging a speed of 84 kms. per hour.

#### From Sweden.

Writing from Sweden, Lieut. Carl Olaf Dahlbeck, the first Swedish naval aviator, who recently took his certificate at Hendon, says:—"I have now jumped on a Blériot, and after jumping about in an Anzani ditto for some time I have taken my two-seater Blériot in hand. I have only, so far, made straight flights of about a mile, as I have had to experiment out the position of the wings, having no exact measures of the *géchissement*. She is of the older type, the same as 'Big Bat' and Mr. Melly's machine, so I hope she will be going on all right.

"The weather in this beastly climate has, however, now for two weeks made it impossible even to open the doors of a hangar; all storm and rain. However, I don't give up the hope of being able to put in some work before going back



to England. I enclose a photo that might give you an idea of what a beauty the machine is, and of the distance between my head and the *pylone*. I wish your excellent paper every success."

# GREEN'S ALL-BRITISH AERO ENGINES

The most economical power unit in existence. Maintains full efficiency at all speeds. Adopted by H.M. War Office. The power developed is exceptional and weight is low—  
4 lbs. per h.p.

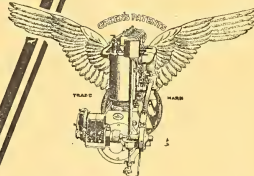
Write for Catalogue and Details.

## THE GREEN ENGINE CO.

(SOLE LICENCEES UNDER THE GREEN'S MOTOR PATENTS SYNDICATE, LTD.)

55, Berners St., Oxford St., London, W.  
MAKERS FOR THE PATENTEES—THE ASTER ENGINEERING CO., LTD.

E. H. G.



# BLERIOT MONOPLANES

"1911."

Paris—Rome: 1st—BLERIOT. 2nd—BLERIOT  
Circuit of Europe: 1st—BLERIOT. 2nd—BLERIOT  
Circuit of Great Britain: 1st—BLERIOT  
Circuit of Belgium: 1st—BLERIOT  
Moscow—St. Petersburg: 1st—BLERIOT  
London—Brighton: 1st—BLERIOT  
Hendon—Brooklands: 1st—BLERIOT  
London to Paris in one flight (3 hours, 56 minutes) on  
BLERIOT,  
etc., etc.

CATALOGUE FREE ON APPLICATION.

Terms for tuition at our London School of Aviation: sent on demand

Tuition Free to all Buyers of Blériot Monoplanes.

All Correspondence to be sent to:

**L. BLERIOT,** Sole Manufacturer,  
PARIS & LONDON

Head Office for the British Empire:

BELFAST  
CHAMBERS, 156, Regent St., London, W.

General Manager: NORBERT CHEREAU.



# 'AVRO' ACCESSORIES FOR QUALITY.

**A.V. ROE & CO.,**

The Aviators' Storehouse,  
BROWNSFIELD MILLS,  
— MANCHESTER. —

Flying Ground, Weybridge.

Telegrams—TRIPLANE.

Telephones—698 CENTRAL.

# VALKYRIE MONOPLANES.

THREE TYPES.

40—80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES.

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

1 TUITION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

**THE AERONAUTICAL SYNDICATE, LTD.,**

ESTABLISHED MARCH, 1903.

**COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.**

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.



## AIR CURRENTS.

### AERODROME TYPES.

#### No. 4.—The Inventor.

Dear man! He is either mad or happy, or both, and the bee in his bonnet is of an abnormal size.

His onslaught is swifter than an arrow, and far more piercing in its effect. There is no escape from him; patient resignation is the only course.

If, when he had reduced you to a quivering mass of incoherence, he would leave you and for ever—but no, he always “forgets” he has seen you and your particular works before, and each succeeding visit is a new *mauvais quart d’heure*.

It is useless to flee the shed and leave him to mangle the mechanics. Time is no object to him apparently, and he will placidly await your return, or dog your footsteps with the persistency of a Sherlock Holmes until he runs you to earth.

Sometimes, by heaping ridicule upon his head and upon the object of his inspired fervour, you can offend him sufficiently to ensure future peace. More often he is stirred to further efforts by your seeming inability to grasp the tremendous importance of the matter under discussion.

He comes armed with sheafs of patent specifications—provisional and occasionally complete. He keeps them carefully concealed in mysterious bag or pocket until the supreme moment, when he reaches the height of his argument and then produces them as though that clinched everything.

Despite your protests about the responsibility of keeping valuable papers, he will force some copies of these patents upon you, together with drawings and figures *ad lib.*, asking you to read them over and give them your earnest consideration. Vainly you seek a means of returning them to him on the spot; he is evidently convinced of their persuasive powers to bring you round to regarding the affair in the proper light. He departs, and, unhappy day, they are put away somewhere, so that like the *insigne* and *auriferum*, they become apparently possessed of the "*wanderlust*" and disappear utterly and entirely.

Sooner or later the day of reckoning comes, and he returns to demand them, or sends a letter to the same effect. It is hopeless to ignore him and equally hopeless to deny all knowledge of his precious literature. He finds a solicitor or a notary public, and writes a letter, which is not, like the first, a soft thing too, and all the usual formal solicitor's letters are poured upon you. Your silence only unlocks the flood-gates further, and you are beginning to wonder what on earth will be the end of it all, when, if the gods are good to you, they will turn up from somewhere and the usual sort of letter set somehow to the right dissatisfaction of everyone concerned.

The average aviator is possessed of unlimited good humour, and suffers fools and their like, if not gladly, at least patiently, so the inventor seldom if ever gets squashed sufficiently badly for it to have lasting or salutary effect.

There is another variety of the inventor species, but for him we have too much respect to speak with levity. The two kinds are at any rate further than the poles apart, and never the twain shall meet, for each probably thinks there is no connection between them.—D. M. H.

### The True History of Icarus.

EXTRACT FROM THE "CRETAN HERALD," 1911 B.C.

(By our Special Misrepresentative.)

It is with much regret that we have to announce that Mr. Icarus, the well-known aviator, has met with a fatal accident.

Our readers will remember that, some time ago, Mr. Icarus announced his intention of attempting a flight from Crete to the mainland. The Royal Cretan Aero Club, however, refused its sanction for various reasons. Mr. Icarus, not recognising their authority, determined to make the attempt, and, early in the morning, ordered his machine to be brought out on to the sea shore. The only witnesses were a few Press representatives and young ladies from the city, admirers of Mr. Icarus, who had come to wish him good luck.

After posing in several different positions and signing various tablets with gold-mounted stylus, the aviator climbed into his seat and, the engine having been started, he was soon

in the air. After circling the town, he set off in the direction of Asia Minor.

The remainder of the sad story we have constructed from the reports of the Misses Eiklotides and Miss Agathos, who witnessed his descent; also, we have been assisted in obtaining the true facts of the case by the few words spoken by Mr. Icarus in hospital.

It appears that the aviator, with his usual recklessness, ascended to an abnormal height, with the result that he was half blinded by the glare of the sun, the consequence being that on descending to an altitude of about 300 cubits he was unable to see his way, and, as he was unable to see, as ever, he cut off his engine and planned down towards them, but, misjudging his distance, fell into the sea. He managed to swim to the rock whereon the Misses Ekloldites were standing, and with great difficulty clambered up. On seeing that he was safe, he turned back to the sea, and, as he was so recently immersed, was too much for him, and he lost consciousness, only recovering for a few minutes in hospital.

At the inquest the jury brought in a verdict of death from aortic aneurism, due to shock, in accordance with the medical evidence.

Mr. Icarus was using an improved Dædalus monoplane fitted with a Heros engine, supplied by the Heros Rotary Engine Company, of Alexandria. The engine was coupled to an Archimedean Screw, manufactured by the Eureka Engineering Company, of Syracuse.

We are glad to be able to say that no blame can be attached to the manufacturers, and can only regret that the deceased's gallantry and politeness to ladies should have been the means of bringing about his death.

J. D. N.



Above is a reproduction of an envelope received by Major Lindsay-Lloyd at Brooklands, the light writing being blue pencil put on by the British Post Office. It was delivered without delay, and shows what the Post Office can do when it tries. Problem; how long would it have taken by Aerial Post? And what is a "Dupekmopy"?

There was once a man who advocated the carrying of a spare motor, in case of one engine failing. There was also another man who did not approve of the idea. And they were discussing the subject.

Said the first man: "You see, if one motor stops when over bad country the pilot can switch on the other and go on, instead of coming down."

Said the other man: "H'm, I could easily improve on that idea."

Said the first man: "How?"

Said the second man: "Instead of carting about a great big heavy motor, as an extra, he ought to carry a spare field about with him to land in if his motor stopped."

And the first man departed, marvelling greatly.



# AVIATION ACCESSORIES

Aneroids, from	-	-	-	£3	5	0
Do. with maximum hand	-	-	-	7	7	0
Do. combined with watch	-	-	-	3	10	0
Revolution Counters, aluminium-	-	-	-	6	6	0
Do. do. brass	-	-	-	5	5	0
Clift's Compasses	-	-	-	10	10	0
Safety Belts, from	-	-	-	1	5	0
Helmets, from	-	-	-	1	5	0

**The Universal Aviation Co.,**  
166, Piccadilly, W.

Telephone:  
3504 Mayfair.

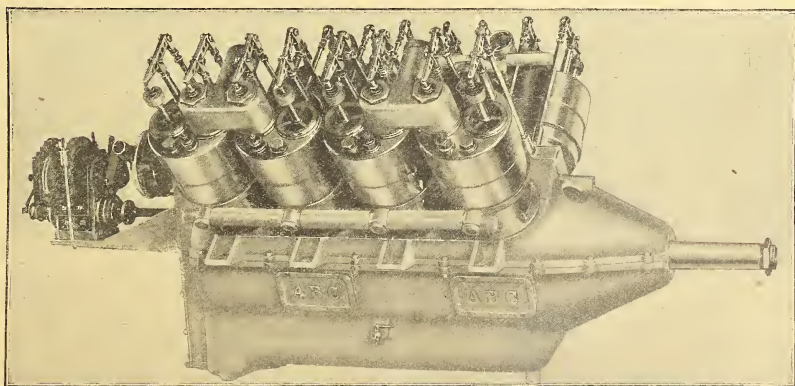
Telegrams:  
"Birding, London."

## A. B. C. AEROPLANE ENGINES

Manufactured by the All-British (Engine) Co., Ltd.

40-h.p. 4-Cyl. Vertical, £275; 80-h.p. 8-Cyl. "V" Type, £450.

(A 120-h.p. 12-Cyl. "V" Type, £675). Under 3 lbs. per B.H.P.



**London Agents:** The Universal Aviation Co., Ltd., 166, Piccadilly, W.

## The Craze: A Study in Comparisons.

By M.L.E.

"I call it silly," said my sister-in-law. "It's just a craze."

We were still occupying the seats of vantage we had secured nearly three hours before, awaiting the arrival of the distinguished aviator who had promised to treat Sunnyside-on-Sea to a series of exhibition flights. His coming had been delayed owing, it was said, to engine trouble. Seaward a gull flashed down to the water in a faultless *vol piqué*, and a white racing cutter was doing astonishing things.

"And wrong, too," she continued. "If we were meant to fly we should all be born with wings. And they certainly ought not to do it on Sundays. Besides, it is so dangerous. I would never let Nigel go up in one of them."

Now the funny thing is that my brother is a sailor. And if you come to think—

\* \* \* \* \*

"It can't be done," said the big man in the wolfskin. "One of these lunatics spends weeks rigging up a framework—plaited willow twigs, or some such nonsense—and covering it with skins to keep the water out. Then he gets it on to the river, and it takes another fortnight and a dozen duckings before he can get into the thing without upsetting it. If he does it at last, and goes floating off down stream, before he has got half a mile the frame gives way, or the water gets in, or the current washes him away bodily. Anyhow, they all come to grief."

"And always will," said his friend, who was polishing up a flint axe-head. "Stands to reason; the thing's impossible. You can't breathe in water, or stand, or sit, or walk on it. The earth was made for man and the water for fish, and if we had been meant to swim we should all be born with fins and a tail."

"Talking of tails, did you hear about poor old Maelwyn?" asked the smart youth with the socks and tie in the latest shade of blue paint. "No? Why, Maelwyn got up a new craft the other day made of wood instead of osier plait. Rotten idea, because naturally the heavier your boat is the quicker it will go to the bottom—what? And he fixed up a sort of adjustable tail at the end, thinking he could steer by it like a fish does. As soon as he was fairly started the tail jammed; Maelwyn leaned over to see what was wrong, and the whole show capsized."

"Well?"

"Oh, that was the end of the tail," said the smart youth,

brightly, "and of Maelwyn too. He hasn't come up yet."

"The subject is not one for jesting," said the Arch-Druid severely. "What with the impiety of these—ah—experiments and the unseemly hours and seasons at which they are conducted, the matter is becoming a public scandal. The one consolation, to right-thinking people, is that all these persons appear to come to a disastrous end, and consequently before long the craze will—ah—suffer a natural process of extinction."

\* \* \* \* \*

I came back to the present with a start. "There's one good thing," my sister-in-law's gentle voice was going steadily on. "This flying nonsense will come to an end soon, because there will be an end of all your flying men." I don't know why she invariably calls them my flying men; the only aviator who belongs to me is the one I once bought in Dieppe for 60 centimes, cross-Channel Blériot included. He is made of tin and prettily painted in nice bright colours, and when I pull him up and down on a string his propeller flies round quite charmingly, which I believe is more than one can always reckon on in the case of a real machine. But this is a digression. "Some of them are always getting smashed up, and only the other day one fell into the sea and was nearly drowned." I believe she was secretly disappointed that the hero of that incident had got off with a salt-water bath. "At this rate they will soon all be killed, and then it will have to stop."

I looked out again towards the beautiful racing yacht. A venomous little motor launch tore shrieking through the water, and from far down Channel sounded the long call of an ocean liner. "Somehow I fancy not," said I.

And with the words my pulse leaped. A wonderful bird was coming towards us out of the sky, and as it came it sang. Dark at first against the blue, onward and onward it swept, until its widespread wings, thirty feet from tip to tip, shone ivory-golden above us in the sunlight, and all our little voices were hushed under the overwhelming paean of the engine.

### More Blériot Successes.

In Spain, as elsewhere, the Blériot continues its prize-winning career. On September 19th Garnier, on a Blériot, won the 250 kilometre race from Salamanca to Valladolid and back, and LeLasseur de Ranzay had already won the previous cross-country race from Valencia to Alicante and back.



The Billing Biplane, formerly known as the "Oozeley Bird," flying with N. S. Percival at the helm.

## The Week's Work.

## Monday, September 18th.

**BROOKLANDS.**—Bristols out early. Fleming, testing air, found it too rough for pupils. In evening Fleming and Pizey both out. Then Captain Richey did two solos of ten and fifteen minutes each, finishing last with bad landing which broke two front chassis struts clean out without damaging anything else in machine, a most unusual form of accident. At Deperdussin School, Wilkins, Sabelli, Chattaway, and Chinnery doing straight flights on taxi. Garne also out showing sudden and very great improvement, flying very straight and steadily. Chattaway and Chinnery then out on brev t machine, both doing well. Porte and Bell each did five circuits on same machine landing with engine switched right off. In evening Bell doing heavily banked sharp turns on same. A good day's work for a 30 h.p. engine, which costs very little money.

**HENDON.**—Greswell left 9.30 a.m. for Windsor in very bad weather, and was brought down by wind close to Hendon Cemetery, two miles off. Hamel left at 5.20 p.m. for Windsor and returned at 6.40 with fine spiral *vol plan * from 2,000 ft. At Chanter School, Chanter doing circuits testing new machine. "Darracq" rolling with spark lever tied back after escapade of Sunday. De Villiers rolling in straight lines with tail well up. Gassier flying straight lines.

**THE PLAIN.**—Very windy. Pixton tried Bristol No. 9, and then took up Capt. Hutchesson on No. 12 for fifteen minutes. Busted taking Lieut. Cross and Lieut. Hooper for fifteen minutes each. Jullerot, after having No. 9 engine adjusted, tried the machine, Gilmour afterwards trying same machine, which was found quite satisfactory.

## Tuesday, September 19th.

**BROOKLANDS.**—Bristols getting ready to go out at 6 a.m., when dirigible *Gannia*, utilising morning calm, appeared from Farnborough and circled track. Pizey and Captain Richey hustled machine out to chase dirigible, but by time machine was out gas-bag half-way back to Farnborough. Bristol pursued it long enough to show it could easily be overtaken both longitudinally and vertically, and then aeroplane came back, pilot frozen, having gone up in pyjamas and jacket suit, without overalls. Afterwards Captain Richey did two good flights. In evening Fleming out testing, but wind too strong. At Blondeau-Hewlett School Longstaff out on Snowden-Smith's biplane and did first half of certificate flights. Roe school busy getting Raynham off to Hendon in early morning, preparatory to starting thence for Michelin Speed Prize with 35 h.p. Green-Avro. Afterwards Noel out with pupils, and Young alone on the old engine-behind machine. Wilkins, Chattaway, Sabelli, and Garne out on Deperdussin taxi. Chinnery out on brev t machine. Cadet Robinson also appeared and did some straight flights, after which he left the school for Osborne, hoping to resume work during Christmas leave. Consequently "The Gift to the Nation" will not be *en evidence* for a while.

**HENDON.**—Pea soup fog; impossible to see 100 yds. Cheerful chug of Green heard, heralding approach of Raynham on Avro. Left Brooklands one hour before; reported fairly clear outside aerodrome. Been nine miles out of course. Machine caused much admiration at Hendon. Hamel left for Windsor on Greswell's machine 5.30 p.m., returned 6.30. At Bl riot School Sacchi and Corbett-Wilson rolling and Slack doing straight flights. At Chanter School "Darracq" and De Villiers both rolling. At Grahaue-White School Mrs. Stocks rolling on Farman fitted with E.N.V. engine, which pulls very well indeed. This machine should do good work if well looked after.

**THE PLAIN.**—Beautifully calm; conditions ideal. Gilmour, on school Bristol, made trial flight, then took Lieut. Hooper and Capt. Steele Hutchesson for ten minutes each. Pixton solo on No. 9 to try; found it perfect. Busted took Lieut. Cross for 1,000 ft. Lieut. Cross then did first solo perfectly at 80 ft.; up for eight minutes. Smith-Barry also did a solo, ten minutes, 200 ft. Lee solo, ten minutes, 200 ft.; much better landing.

**SHOREHAM.**—Valentine paid surprise visit about 5 o'clock, intending to fly to Dover, but, machine not being ready, could not leave until an hour later, when, although the wind was blowing over 20 m.p.h. and darkness had begun to set in, he started off, and soon reached 1,500 ft., heading for Dover. Finding wind tricky and darkness coming on more rapidly than expected, decided to return, regaining the aerodrome, with splendid *vol plan *, at 6.25.



Gordon Bell on the Deperdussin Certificate Machine.

## Wednesday, September 20th.

**BROOKLANDS.**—Gale blowing all previous night and all day. **HENDON.**—At Bl riot School, Prensniel, Sacchi, and Corbett-Wilson rolling. At Chanter School "Darracq" and De Villiers ditto. At Grahaue-White School Mrs. Stocks doing straight hops in gusty wind on E.N.V. Farman. Avro out fitted with new and experimental propeller. Raynham not feeling pleased with it.

**THE PLAIN.**—Blowing big guns all day and raining in torrents. Nothing doing.

**LANARK.**—Last week till to-day by no means perfect for tuition work; very gusty wind blowing all the time, but instruction given on machines in the hangars. Weather to-day absolutely perfect, and tuition work started by Jackson, who, after runs along the ground, made short hops. Then Neild rolling for some time. Work finished by Even, who made a flight of forty-eight minutes on Deperdussin, landing with *en vol plan * from about 200 ft.

**CARFARF.**—Exhibition flights by B. C. Hucks on Blackburn. Witnessed by many people, mostly outside "aerodrome."

## Thursday, September 21st.

**BROOKLANDS.**—Fleming first out on Bristol testing air. Then Lieut. Wyness-Stuart out for certificate. Did his ten figures of eight in excellent style, but did not go for altitude owing to gusts above 100 ft. Capt. Richey also out. In evening Pizey out testing air. Then Lieut. Wyness-Stuart completed altitude test and passed for certificate. He has the style and temperament of a fine flyer if he gets further opportunities for practice (Air Battalion please note). Afterwards Pizey up with Capt. Richey as passenger for height and landing practice, and then Richey alone for three flights of ten minutes each. New pupil, Major R. L. Benwell, of Scinde Horse, then arrived and went for first trip with Pizey. At Blondeau-Hewlett School in morning Longstaff did second half of brev t test on Snowden-Smith's biplane, the school machine being trued up and overhauled after ill-usage at Plymouth. Also in morning Maurice Ducrocq out flying well on old-style biplane. Unexpected apparition of Billing biplane, erstwhile the "Oozely Bird," with extensions to upper plane. Astonishing effect. No appreciable diminution in speed and surprising



addition to lift; now able to fly with tail well up. Percival got her up to 800 ft., and, later, took his mechanic as passenger up to 200 ft. At Avro School Noel out with pupils and taking up passengers on the old engine-behind machine, still very decrepit in spite of new wiring. At Deperdussin School Wilkins on taxi doing straight flights and Sabelli making exceedingly bad attempts at hops. Chattaway and Garne on brev  machine, former as good as usual and latter going very straight and steadily on the faster machine.

HENDON.—At Bl riot School: Prenniell, Sacchi, and Corbett-Wilson rolling. Slack doing excellent circuits. At Chantier School, apparently some trouble with proprietors of aerodrome which resulted in an order to exclude all Chantier pupils from grounds. More likely to be heard later, so comment inadvisable. At Grahame-White School Mrs. Stocks again doing short, straight flights, when wire came adrift and smashed propeller.

THE PLAIN.—Hotchkiss made solo of Bristol, to test conditions, for fifteen minutes. Busted took Lieut. Strover ten minutes; Pixton trial on No. 12; Smith-Barry two flights of ten and fifteen minutes; Lieut. Cross two flights eight minutes each; Lieut. Strover one flight of eight minutes, as well as Capt Steele Hutcheson and Lieut. Newall. In evening Gilmour up with lady passenger, and afterwards with Smith-Barry as passenger. Busted up with Lieut. Hooper; Lieut. Cross made one flight of ten minutes; Lieut. Newall one solo eight minutes; and Smith-Barry same; as well as Lieut. Strover.

LANARK.—Jackson, Neild, and Warren out in morning, but at midday gusty wind stopped flying.

EASTCHURCH.—Interest this week centred chiefly on Mr. McClean's trial flights with new Short twin-engine machine. To-day Mr. McClean took up several naval officers as passengers, making a tour of the island at a height of 600 ft. Mr. McClean is particularly pleased with the climbing qualities of his new mount; it seems to have unlimited powers in this direction.

SHOREHAM.—Valentine left here this morning for Dover, covering eighty miles in seventy minutes. Carried with him a letter from Chief Constable of Brighton (Mr. Gentle) to Chief Constable of Dover (Mr. Fox). This was delivered shortly after arrival—quite a prompt aerial post!—(C. A. C. WINCHESTER.)

CARDIFF.—More exhibitions by B. C. Hucks on Blackburn.

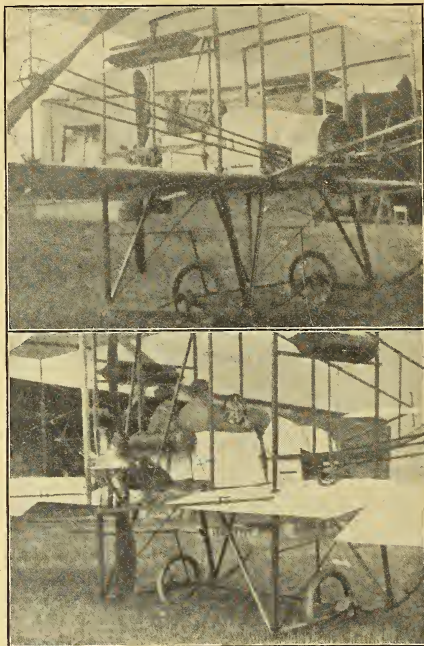
#### Friday, September 22nd.

BROOKLANDS.—In early morning Pizey out with Major Benwell as passenger. Then Capt. Richey did first part of certificate tests. Afterwards Pizey out again with Major Benwell at lever, followed by Richey doing a solo for further practice. In afternoon, at 3.15, Pizey testing engine with Capt. Millas, of Spanish Army Royal Engineers, as passenger. Engine not doing well, so spare engine put in and machine out again with Fleming up, at 4.30. Sharp work. Then Pizey giving another lesson to Major Benwell, and Fleming yet another to same pupil. These Bristol pupils seem to get plenty of teaching. Afterwards Pizey up with Mr. Pearce, of Bristol head office staff. Then Fleming with Major Benwell again, followed by Pizey with Lieut. Ashton, another new pupil, who is going to Salisbury School. Blondeau-Bleuet School busy in morning. Mr. Hewlett out from 10 to 11 a.m. on Snowden-Smith's machine. After lunch Blondeau up with Miss Fry and Mrs. Dobell, of Women's Aerial League, and then Snowden-Smith took up Miss Kennedy, of The Matron. Maurice Ducrocq out flying well. Young doing circuits on engine-behind Avro, and Noel up with passengers. Evil day for Deperdussin School. Garne, doing straight flights on brev  machine, got near river, came down suddenly and broke a skid. Then Sabelli on taxi made one straight flight horrible to behold, turned round, and made a bee-line for the fence in front of sheds. Never wavering in apparently fell purpose, drove straight into it, demolishing fence and most of taxi. Mechanics busy putting together newly-arrived two-seater, a very handsome machine, with 60 h.p. radial Anzani.

HENDON.—At Bl riot School: Sacchi and Prenniell rolling. Corbett-Wilson, doing straight flights, got tail too high once and propeller vanished suddenly. Despite prohibition to enter, De Villiers, of Chantier School, managed to do some rolling in early morning, and Gassler flew circuits.

THE PLAIN.—Busted made solo on Bristol to test weather, afterwards giving two passenger flights to Lieut. Hooper. Two solos each by Lieut. Newall, Capt. Steele Hutcheson, Lieuts. Cross and Strover. All these pupils developing into very good flyers.

BRISTOL.—Gordon England out in field behind the British and Colonial Aeroplane Company's works at Filton putting a new passenger-carrying Bristol through her paces. Did



Mr. Frank McClean and Lieut. Samson on the 100-h.p. Short.

two fine circuits of about five minutes each. After a little adjustment he found the machine perfect. At 5.20 started off for Salisbury, taking as passenger Harry Deacombe, the Bristol Flying Manager, to witness speed tests of new Bristol monoplane; wind very gusty, but machine behaved remarkably well. Journey abandoned after a few miles owing to thick mist, making it impossible to see more than half a mile ahead.

LANARK.—Ewen made two beautiful flights on Deperdussin. In first he followed Clyde until near Carstairs, where he braced off, and, passing over Cleghorn and touching Lanark, he landed in the aerodrome after nearly half an hour. In second flight he flew to Tinto, a mountain seven miles from aerodrome, after which he made a *vol plan * from 400 ft.

EASTCHURCH.—At 9.30 Valentine arrived from Dover on Deperdussin, and after short stop for oil and petrol again started up and headed for Burnham, getting away in fine style. Further flights with twin-engine machine in afternoon, lasting upwards of two hours, during which pilot made many sharp right and left turns, and occasionally flew with both engines throttled down, reducing speed of machine considerably.

CARDIFF.—B. C. Hucks, on Blackburn, still doing exhibitions.

BURNHAM-ON-CROUCH.—Motor-boat regatta to-day. Much excitement caused by unexpected arrival about 11 a.m. of James Valentine on Deperdussin. Left Dover in early morning. Landed at Eastchurch to pay visit to Royal Aero Club ground, and so across Isle of Sheppey and mouth of Thames to Burnham. In afternoon showed his versatility by steering a motor boat, taking with him as passenger H. Petre, another pilot-aviator.

#### Saturday, September 23rd.

BROOKLANDS.—Fleming on Bristol, with mechanic as passenger, out to test air, but too windy for pupils. In evening Pizey also testing, but wind still bad. Noel on engine-behind Avro did a few circuits, but wind and rain stopped flying before dark.

HENDON.—Hamel on strike. Demanded £500 for Hubert

before he will carry "mails." All aviators entirely in sympathy with his demands.

**THE PLAIN.**—Too windy for solo flying by pupils and for expected speed tests of monoplane. Pouring rain in evening.  
**SUDBURYHAM.**—Metzgar-Leno monoplane appears to justify all that designers and builders, Messrs. Metzgar Bros. and Leno, claim for it. The tests carried out on Thursday, Friday, and Saturday included a number of hops, and speak well for machine, which puts up a good show of speed, and is evidently well under control. Negotiations in progress to arrange non-stop aeroplane race from the Brighton-Shoreham aerodrome to the Crystal Palace and back.

**CARDIFF.**—Blackburn, with B. C. Hucks on board, now a familiar feature of atmosphere. Crowd much interested, but still outside.

**FLEY.**—Bad weather all week. Only out-door work at Blackburn School being short flights over bay by Hubert Oxley and practice spins by Farren.

#### Sunday, September 24th.

**BROOKLANDS.**—Nothing doing in morning, and bad wind till 4.30 p.m. Then plenty of flying till dark. Snowden-Smith out across country with lady passenger. Spencer flying magnificently, and late in day up with Miss Gertrude Bacon, the well-known writer and lecturer on aviation. Noel and Young out on old engine-behind Avro, former landing on tail, owing to oil, age, and infirmity having destroyed camber of lower tail-plane, which has a negative camber in parts, and refuses to lift except in slip-stream of propeller. Ribs in main planes also decrepit, and, if all planes not rebuilt, will result in serious trouble for someone. Pizey and Fleming out in turn on Bristol. Former, after good flight with Major Benwell, taxi-ing to pick up another passenger, fouled Spencer's elevator with his left extension, owing to sun in his eyes blinding him for a moment. Tore extension, so took both off, and, in spite of decreased surface, took up Mr. H. C. W. Grimshaw, Provincial Commissioner of Gold Coast, for several circuits. Entertainment concluded by arrival of Raynham on Avro from Hendon. Found that, owing to alternate heat and damp of past week, fabric of wings had sagged, so that machine would not lift necessary load of petrol for Michelin Circuit, so came back to have machine put right. Appeared suddenly in evening sky at 1,000 ft. over Weybridge, and made excellent landing.

**THE PLAIN.**—Jullerot made trial, Busted taking Lieut. Balder, after which nearly all pupils made solos, Pixton flying machine back to sheds.

**EASTCHURCH.**—The Hon. Maurice Egerton out making long cross-country tour by way of Sheerness, whence he was followed by Mr. McClean on the "Twin," who, on his return, made faultless landing with both engines stopped. At conclusion of these flights, and just as it was growing dusk, Valentine again arrived on Doperdussin, landing very neatly close to one of sheds. Had flown from Burnham, sixteen miles, in a side wind, in 18 m. 26 s. After seeing his machine safe for the night he returned to Town by train.

**CARDIFF.**—Experiments win wireless telephone. Messages transmitted by Grindell-Matthews to Hucks on Blackburn, alleged by papers to have been heard by pilot.

#### Italian Notes.

The exhibition meeting seems to be far from dead here—even rapidly reviving. Lugano and Intra each had a three-days' show last week.

Frey, in spite of his smash in Rome-Turin, entered for Bologna-Rimini. There were thirteen competitors, among whom were six officers, *hors concours* these latter.

The Duchess Elena of Aosta, following Royal example, went up with Eros at Mirafiori a few days back. The Asteria is doing magnificently there, too, as you thought it should.

I note that from Italy is likely to proceed the landing chassis, the natural result of the bad landing surface; as England with its gusty winds must tackle stability.

Two very excellent modified Blériot type machines, Caproni and Chiribiri, shine in this respect. The latter, with a car type motor, with a blunt-nose fuselage quite enclosed, has been flying over Turin daily.

Schools are springing up like mushrooms in the English summer of the "usual severity" kind. The great central plain, Modena-Bologna, etc., is the latest field.

The Italian circuit, Bologna-Venice-Rimini-Bologna, finished on the 20th, having been run in three stages. The ultimate winner was Frey, on a Morane, a fine performance considering that two or three months ago his life was despaired of after he had spent eight hours or so in a ditch with a broken arm and leg and several broken ribs. The second was Gaubert, on a biplane. The Italian officers all finished.—(T. S. HARVEY.)

#### The Reformation of the Aeronautical Society.

The adjourned annual general meeting of the Aeronautical Society was held on September 25th. The old Council, having at last realised that they had got to go, went quietly, and the rules framed by the Reform Committee were carried without trouble. The following members were elected to form the new Council: A. E. Berriman, Captain A. D. Carden, T. W. K. Clarke, Bertram G. Cooper, J. W. Dunne, John Dunville, J. H. Ledebore, Captain E. M. Maitland, F. K. McClean, Lord Montagu de Beaulieu, Alec Ogilvie, Mervyn O'Gorman, F. Handley Page, Colonel H. E. Rawson, and Colonel F. S. Stone. It will thus be seen that all those who have for so long hampered the progress of the Society, wasted its funds, and generally reduced it to a state of futile ineptitude, have now been removed, and with such a very able and influential body of men at its head as it now possesses, the society should have a brilliant future before it. One can only hope that the next election for the committee of the Royal Aero Club will have equally satisfactory results.

#### A New Height Record with Passenger

On September 22nd, Michel Mahieu, who will be remembered as one of the few competitors who reached Brussels last year in the Paris-Brussels and back competition, beat the record for height with passenger. Driving an all-steel Voisin biplane, and carrying M. Fay as passenger, he reached a height of 2,460 metres (approximately 8,000 feet), thus beating the Comte de Montalant's record of 2,250 metres, made at Brooklands on a Bréguet. The machine weighs 914 kilos. (about 1,060 lbs.) in running order, and carried a dead weight of 250 kilos. (613 lbs.). The motor used was a Renault. Thus the record for weight-lifting passes from one "all-steel" machine to another, and from one stationary-cylinder engine to another.

#### The Late Lieut. Cammell.

The funeral of the late Lieut. Cammell, with full military honours, took place at Aldershot on Thursday last, the 21st.

Among the many floral tributes was a wreath expressing the deep regret and sympathy of the Committee and Members of the Royal Aero Club, which body was represented by Mr. Roger W. Wallace, K.C., chairman, Mr. Mervyn O'Gorman, and Mr. Harold E. Perrin, the secretary.



The Henriot monoplane, familiarly known as the "Henrietta," with H. Petre (Peter the Monk) at the lever.



## "Wireless" on Aeroplanes.

Reports have been coming in from various sources as to experiments, successful and otherwise, with wireless telegraphy and telephony to and from aeroplanes. As the writer has had experience of both branches of engineering science, a summation of present possibilities may be interesting.

The subject naturally falls into two divisions: telegraphy and telephony.

Of these two, telegraphy presents, comparatively, little difficulty. The apparatus is rather heavy—the Marconi outfit comprises a petrol engine, an alternator, and a transformer, besides much miscellaneous "gadgetry," and weighs about 250 lbs. This, however, is not so serious as it looks, for there are plenty of machines which can lift this weight. A more important matter is the impossibility of maintaining an earth connection.

This means that neither the Marconi, Fessenden, Slaby-Arco, or Poulsen systems, as used at present, can be used, and one is confined to modifications of the Lodge and original Herz systems, which use two "aerials and no earth."

Whatever system of transmission is used, there is also the great difficulty of "receiving" on board the machine. First, it must be remembered that, owing to the rush of air and the noise of the engine, it will be practically impossible to receive in the usual manner by the intermittent buzz of a telephone receiver.

Secondly, the vibration of the machine will certainly upset any relay in use at the present time, so that the faint currents passed through the coherer cannot be made to actuate a stronger circuit and work a Morse inker, as is done in many systems at present.

The only alternative in use is the "siphon" recorder, which causes the faint coherer currents to make a record in ink without the use of a relay. But as the siphon recorder, by its very nature, is more sensitive than most relays, it is, of course, hopeless to expect it to work on a machine. Therefore one is forced to the conclusion that, while it is a comparatively simple matter to send signals by wireless from the machine, it is practically impossible, with apparatus in use at the present moment, to receive a message on an aeroplane.

It should, however, be remembered that the Marconi company are at present making extensive experiments with the Flanders monoplane, and it is possible that Signor Marconi has made secret experiments with a new type of receiver—though it is noticeable that no provisions for receiving are as yet being made.

### A Real Aviation Tragedy.

One hears a great deal of the tragedies of aviation, but there have been few tragedies so great as the death of Henri Richer recently. For four years Richer had devoted himself to aviation. Before aeroplanes flew at all he was working hard at experimental work with the late Captain Ferber. With Captain Ferber he learned to fly the earliest type of Voisin machine. After the death of Captain Ferber he continued to fly, and at the "great" Juvisy meeting in October,

With regard to telephony, we are in a yet worse position. For consider the difficulties which would be found in using an ordinary "line" telephone under the circumstances. As mentioned above, no man could possibly distinguish words in an ordinary 'phone while flying a machine at high speed, and with a powerful engine going. Besides this, no telephone transmitter has yet been made that will pick out the human voice and transmit that only. The ordinary transmitter or microphone sends off every noise which is made near it, and it also translates every concussion or vibration it receives into a loud buzz or bang—everyone who uses a 'phone knows this. Imagine, then, the headache of the operator on *terra firma* who has been trying to pick out the aviator's words from the mixed packet of screaming wind, tearing exhausts, clicking valves, and mixed vibrational humming, all of which will be faithfully transmitted to him!

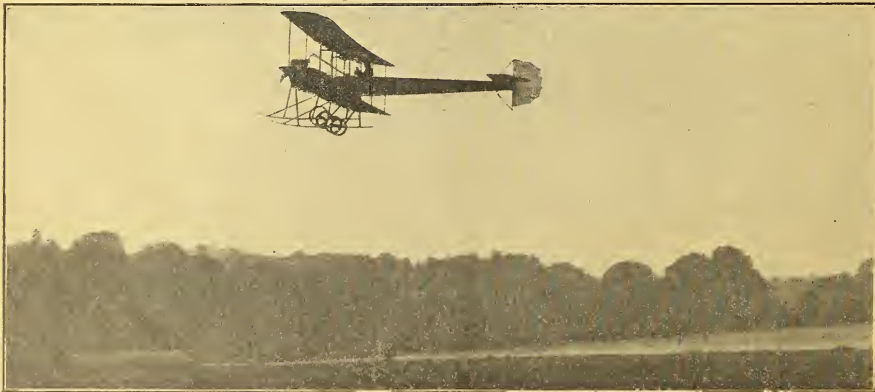
All this is in addition to the difficulties of telegraphy, explained above, which are, as the writer knows to his cost, magnified a hundredfold in telephone work. Let it be remembered, in this connection, that Fessenden, whose system is probably better adapted to telephony than any other, could only speak forty miles by wireless, whereas with the same power he telegraphed 3,000 miles.

There appeared in the dailies a few days ago circumstantial reports of speech transmitted by Mr. Grindell-Matthews to Mr. B. C. Hucks, while the latter was flying his Blackburn. These gentlemen (both of whom are personally known to the writer) must be rather aghast at the reporters' stories—unless, that is, they have perpetrated a pretty hoax on the Press.

As a matter of fact, the writer was assisting Mr. Grindell-Matthews in his experiments as recently as March of this year. At that time Mr. Matthews' portable "aerophone" would just transmit the sound of the voice to 800 yards with masts 60 feet high. The words were quite indistinguishable. This is, as a matter of fact, a magnificent performance for an outfit of the extremely small size and weight used, and Mr. Matthews, with a full-sized outfit, could probably 'phone over anything up to 10 miles. But to be reported as having, with a "baby" outfit, communicated with a man in a machine doing 60 m.p.h. at 600 feet! How he and Hucks must laugh! Unless, indeed, Mr. Matthews has made a bigger advance in six months than all the world's experts have done in twenty years. Messrs. Matthews' and Hucks' own account of the performance is awaited with interest.

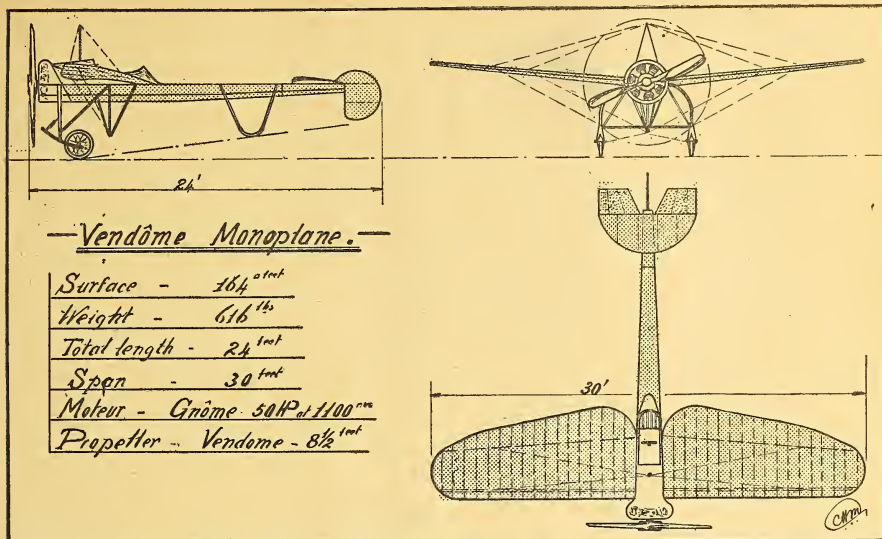
P. K. TURNER.

1909, he had a bad smash, in which he lost an ear. Afterwards he went to the Argentine with Brégy and Paillette, only returning to France this year. All these years he had been flying, but had never taken his pilot's certificate. So, on his return, merely as a matter of form, he went to Le Crotoy, where the Caudron firm have a school. On August 22nd he passed the necessary tests for his certificate, mere child's play to a man of his experience, and, in doing so, caught a chill, which developed complications, of which he died about a fortnight ago.



Raynham on the Avro, flying in the evening at Brooklands.





#### The "Vendôme" Monoplane.

The late military manoeuvres in France have brought considerable notice to bear on all new military type monoplanes. In the latest Vendôme there are one or two points well worthy of note. The most interesting is the fact that the fuselage of the machine is hinged 4 feet from the end, and is capable of being folded back on itself, thus allowing the machine to be carried on the army wagons, which are about 20 feet long. This movable piece is hinged on the top, and securely bolted underneath.

Another peculiarity is that the wings are much tapered, being cut away along the back edge from the tip and somewhat resembling those of a fly. This cutting away of so much of the wing render the warp less effective.

The main spars are made very strong, the front one being of H section, the wings being braced by a single cable.

The motor is placed under a metal shield, which has been nicknamed the "fly's head," which, from the plan view, it will be seen very much to resemble.

The machine should be very fast, owing to the head resistance being greatly cut down and the possibility of using a large propeller.

A neat cockpit with a wind shield is arranged for the pilot, who should have a good view all round, the wings being cut in near the fuselage to allow for this.

The fuselage is pentagonal of small section, the two top longitudinals being carried right to the front, and supported

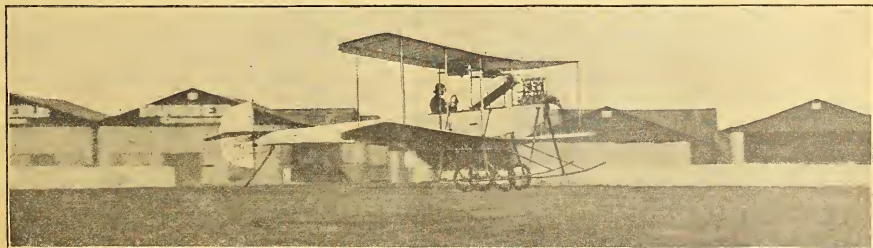
by the arc of the landing chassis. They themselves support the motor. No wiring is used in the fuselage, which is kept rigid by the wood with which it is covered.

The control is of the usual type, with wing warping and elevators worked by a wheel, and rudder by a foot bar.

The landing chassis is especially worthy of note. The outlines of construction can easily be seen from the line drawing. No rubber is used for the tension spring of the wheel forks, a stiff coiled spring taking its place. The arched "legs" of the chassis are made of ash and are exceedingly stout, thus being capable of standing the very severe shocks which it is apt to get in military work. At the same time it would appear to require very careful handling in landing to avoid standing on its head, though, on the other hand, this type of construction is very strong and simple, and does not offer much head resistance.

#### Accident to Captain Sanders.

His many friends will regret to hear that Captain Sanders, of Sanders biplane fame, recently had a very nasty accident whilst motor cycling. A friend of his, sending the news, says that Captain Sanders was taking a hill rapidly, and forgot that he was no longer careering in the air. He elevated the handle bars of the machine, and was hugely surprised to find himself in a friendly ditch among the somewhat mangled remains of the motor cycle. May he make a rapid recovery.



Raynham on the new Avro, just getting off the ground at Brooklands.

## A NEW AERO ENGINE.

Mr. W. L. Adams, of Bournemouth, sends the following description of the 60-80 h.p. engine he has entered for the Alexander Engine Competition. Mr. Adams says:—

"The engine shown is the one specially designed and built at my Redbridge Motor Works, near Southampton, to comply with my entry for the Alexander Motor £1,000 Prize competition, and it is shown complete with everything except radiator, all pipes, connections, and wire being intact. This engine is to be delivered at the War Office Army Aircraft Factory, South Farnborough, Hants, on or before September 30th, and the tests will be carried out by the engineers of the National Physical Laboratory.

"The main object has been to overcome the usual overheating of aeroplane engines. This object has been attained by using the great pressure of air from the propeller to circulate right through the crankcase bearings and moving parts, and, after extracting the heat from same, to use the hot air under pressure for carburettor purposes.

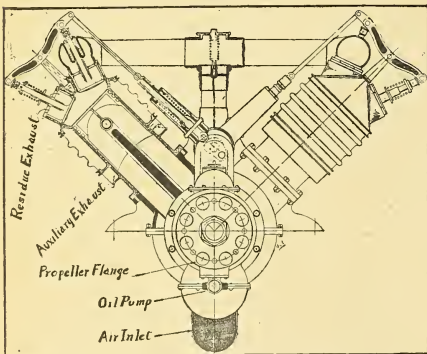
"It will be noticed in the drawing that where the oil sump finishes, a bell-mouthed opening, covered with gauze, as far as possible from the centre of the propeller, receives the air, the outlet for the same being at the opposite end above the camshaft and connected to the floatless carburettor, which works at any angle, or even upside down.

"The engine weighs less than 4 lbs. per h.p., and the price is cut down to £250, less a discount to the trade.

"The cylinders are 4 ins. diameter by 4½ ins. stroke, made of the very best grey, close-grained cast iron, carefully tested, after being rough bored and seasoned. They are ground to a limit gauge, and have a long turned register fitting into the crank-case, to which it is fixed by a circular flange with six bolts and nuts (not studs).

"The water jacket is of light gauge seamless spun copper tube, pressed over the flanges top and bottom, and made water-tight by shrinking steel rings on.

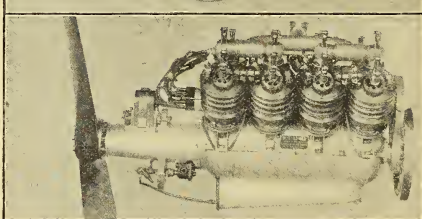
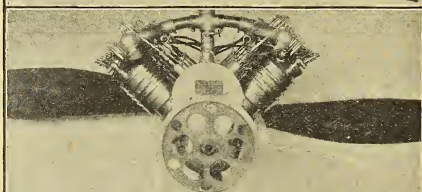
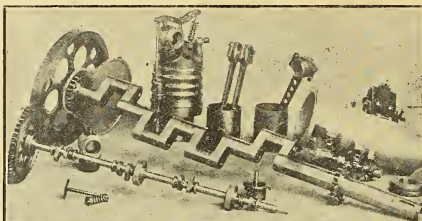
"Below the bottom steel ring will be seen an annular space; this is really the auxiliary exhaust silencer, the copper jacket being turned over the bottom flange. It is therefore impossible for any flame to reach any leaky petrol which may be about and cause fire; also, the holes do not extend more than two-thirds of the circumference of the cylinder by this method, and, making the piston longer than the stroke, the holes are never uncovered from below, so that it is impossible, as shown on the drawing, for any oil to be thrown out.



"My long experience with a leading Continental maker of engines, who spent many thousands of pounds in replacing thin steel cylinders with cast iron, makes me assured that although slightly heavier they are less likely to cause trouble eventually. The long 5 in. pistons are also of special cast iron, carefully designed, very light, and machined nearly all over, and weighed up to ¼ oz. I have proved in the past that more power is obtained by a long piston with a gudgeon in the correct position to eliminate as much angular thrust from the connecting rod as possible.

"The valves are of an alloy with the correct quantity of nickel, with flat seats 5/16 in. lift, 2½ ins. diameter, mounted in cages at 45 deg. The cages are turned from U.S. steel, case hardened, the guide holes ground out, after which the flat seats are ground true. The main exhaust being below, they never after this treatment give trouble. This auxiliary

exhaust is in operation at the last half down and half up of the slowest moving part of the stroke, so that the exhaust valve opens against very slight pressure, instead of about 80 lbs. to the square inch.



"The valves are mechanically operated by a special single cam, which is plus and minus a circle; therefore only eight cams are used instead of sixteen, and, being of ample surface and the hollow push rod being fitted with a roller, it is obvious that no trouble is likely to arise from this cause as long as the engine is in existence.

"The cylinders are mounted in the crank chamber at 45 deg. to the vertical, and opposite to each other. This necessitates a special form of connecting rod, and, after weighing the pros and cons of the different methods, such as not getting a straight thrust with the type which are anchored on to a master rod (for with advanced or retarded ignition and one anchored rod the tendency is to turn the bearing around the crankshaft instead of the shaft itself), also, the cost of machining and balancing forked rods being excessive, made me decide on using two light rods on alternate cylinders, which has been cheap to make and very successful.

"The flywheel is turned from a Jessop's steel forging and is 14 ins. diameter, rim 1½ ins. wide by ½ in. deep. The crankshaft has five bearings, and runs in white metal, and one 6 in. bearing. The shaft inside the crank-case is 1½ ins. diameter, with a 1 in. hole and 2 ins. diameter, with 1½ ins. in the propeller extension. It is made of Jessop's nickel chrome steel. Light tubes, ¾ in. diameter, with their ends expanded, are spun in the 1 in. holes, thus leaving an annular 1/16 in. space through which the oil is pumped under pressure; the cold air passing through the tubes keeps both the oil and bearings cool.

"With all monoplane the trouble is to get the engine sufficiently far enough back to get the correct centre of pressure without the propeller fouling the machine. In my engine I have mounted a taper trunk extension piece 16 ins. long, in which is fixed a 6 in. ball bearing, close to the propeller; the thrust bearing, which is actually on the propeller coupling; and the magneto, which is easily dismountable and accessible, and is driven twice the engine speed, the current being transferred to a separate distributor on the end of the camshaft.



## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

## Hubert's Accident.

Sir,—I do not know who the writer of the article "The Aerial Farce" in the September 14th number of your paper may be, but I quite agree with most of the remarks made.

Re Hubert, the remarks are quite correct, but, as I was with him that morning, I must say your article does not by any means state the case fully.

The three aviators had been on the ground since 5 o'clock, but no official turned up to get the mail bags till 6 o'clock.

The wind had then begun to rise, and Hubert was anxious to get away. But no! He must wait. So first Greswell, then Driver were sent away. By this time (6.45) the wind was well up, and Hubert was doubtful. He, however, had his machine out and tried one circle of the aerodrome. He then told me it was dangerous, but if they could get the eight mail bags on in five minutes he would start. They were not on in fifteen minutes. The wind then was absolutely dangerous to the machine he was to fly, and he took off his muffler and gauntlets and commenced to undo his overalls.

It was then he was pressed to start and make a record, as he had double the weight that any machine had hitherto carried. Unfortunately he gave in, with the deplorable result already known. Poor Hubert, his good-natured disposition was thus his undoing.

I can only hope he will progress as favourably as he has done up to now, and I think everyone will wish him every success in future.

Hendon.

MASCOT.

## Fire.

Sir,—Having read in your valuable weekly of so many machines catching fire, I beg to offer a suggestion which I think may be worthy of consideration to pilots using open exhausts.

My suggestion is that the pipes conveying the petrol from the tank to the engine should be encased in a rubber tube which would just fit over the copper pipe, and which would be clipped close up to the tank and the carburettor. In the event of the pipe giving way as it is apt to do from the vibrations of the engine, the petrol would still be held in by the rubber.

From experiments I find that as soon as the copper gives out the rubber allows the loose pipe to vibrate to such an extent that it at once restricts the flow of petrol, with the result that the engine begins to slow down.

A short piece of thick canvas and rubber tube between the tank and the carburettor will also be found beneficial (close up to the carburettor). This must not be left too loose or the vibrations will affect the flow in the same way as before mentioned.

H. H.

## The Elusive "K."

Sir,—In your recent description of the Flanders monoplane you mentioned that the planes have as high a coeff K as .008. Is the Eiffel Tower formula usually employed in lift calculations?

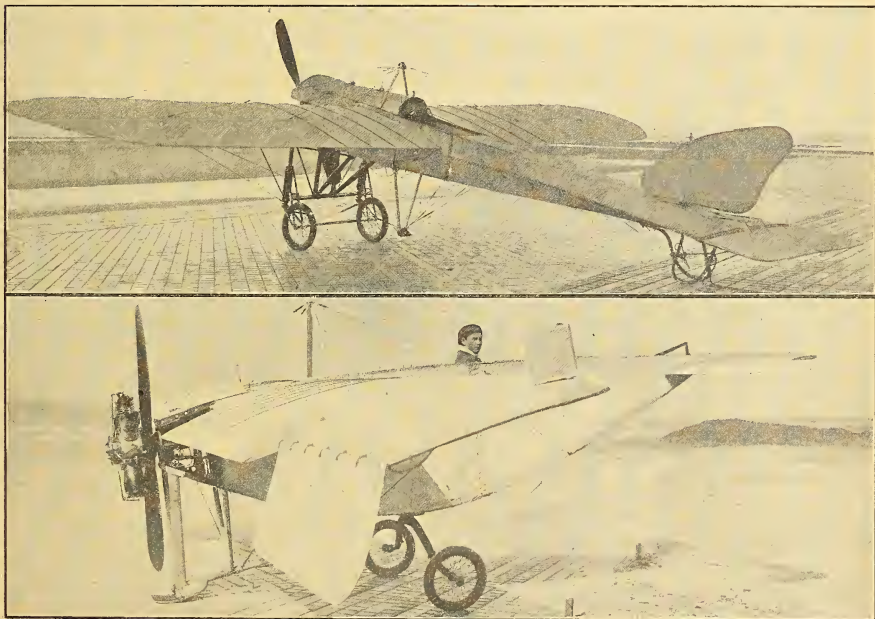
$$Pa = \frac{a \times KAV^2}{30} \quad \left\{ \begin{array}{l} \text{where } a = \text{angle of incidence} \\ A = \text{area in sq. feet} \\ V = \text{m.p.h.} \end{array} \right.$$

For I notice that in substituting 6.5 lbs. per sq. ft., 6 deg. incidence, and 65 m.p.h., K works out at .008, whereas the values you gave were 1 in 5 incidence and 60 m.p.h. An explanation in your excellent journal would greatly set my mind at ease.

Newcastle-on-Tyne.

C. IAN BURRELL.

[Mr. P. K. Turner will reply next week.—Ed.]



**BEAUTY AND THE BEAST.**—The handsome new Blériot single-seater of the latest type produced by M. Blériot during his summer holidays, and the weird little Blériot "Canard," produced during the same period.



### The Aeroplane Section, R.E.

Sir,—With reference to the paragraph "The Aeroplane Section, R.E." in THE AEROPANE of September 21st, it appears to me that you are under a misapprehension as regards "No. 1 Section, R.E.," as well as being anxious to eat your cake before it is baked.

To take the latter point first. In view of the general supineness of the powers-that-be when dealing with scientific innovations, the fact that aeroplanes are actually admitted to be of military use is something to be thankful for. It is rather unreasonable to expect that they will at once be elevated to the rank of the "fourth arm." Even France has not yet got as far as this. Though some of the French papers refer to it as the "fourth arm," the French Air Corps is still part of the sappers—I write subject to correction—and commanded by a Sapper General. Civilians employed on manoeuvres take rank as sappers, or N.C.O.'s; the late M. Nieuport was, I believe, officially "Sapper" Nieuport at the time of his accident.

The Royal Engineers are the obvious branch of the Service to use for making a start with this new arm, as, not only is their organisation so elastic as to be capable of adjustment to any requirements, but also skilled artisans of various trades are already available in the ranks.

The fact that military aviation in its childhood has a sapper nurse does not in any way imply that the other arms are ineligible for posts in its household. Far from it; there is even precedent for the housekeeper to belong to another arm. For many years the old Balloon Section, R.E., was commanded by Colonel Templar, a rifleman.

Now as regards "No. 1 Aeroplane Section, R.E.," it seems to have escaped your notice that from the day of its birth the Air Battalion has been the "Air Battalion, R.E." At present it only consists of headquarters and two companies, one of which is the Aeroplane Company. The normal sub-division of a "company" is into four "sections," and the fact that the existing nucleus, of what we may hope to see become the future "Air Service," is not officially regarded as a whole "company," but as "No. 1 Section" of that company, is a matter for congratulation rather than the reverse.

It gives distinct promise of rapid expansion in future. I do not presume to be able to read the minds of the Olympians of Whitehall, but I should feel inclined to forecast the line of the more immediate expansion as follows:—

The present Aeroplane Company will become two companies of four sections each. No. 1 Section of each company will form headquarters and training schools for pilots. The remaining six sections will form part of the divisional troops of the six divisions and train observers.

A first-rate pilot must be a good mechanic as well as a good flyer. We can get plenty of officers who can fly well, but then there will be a difficulty in obtaining a sufficient number with the requisite knowledge of engines.

Personally, therefore, I am of opinion that the present "officer-pilot" will rapidly become "obsolescent," except as instructors. The officers concerned will still be trained as pilots so as to be able to take charge of machines in case

of necessity, but their chief rôle will be that of "observers." Each machine will have two pilots—one resting on land while the other is flying—but these pilots will be pilot-mechanics, with warrant or non-commissioned rank, of that stamp of man, now to be found at any big flying schools, which is being rapidly evolved by nature to meet the requirements of the new science. WEXFORD.

### Those Engines Again.

Sir,—The following interesting statement, which was made to me yesterday by a gentleman who really knows something about aviation and aviators, should be a valuable asset in the hands of advocates of rotary engines:—

"Beaumont and Veederen [this seems to be nearly as bad a stumbling block as Blériot] and Cody, and the other man who finished the Circuit, all had Gomm engines. All the others—the men who didn't get round—had Antonites. There's a peculiar thing about the Gomm which is not generally known, and that is that when it once gets started you can't stop it. It simply keeps on and on for hours, and there's no way of making it leave off, so that the man must go on flying till the engine gives out. And that is why it leaves all the others behind, and always will."

Now that this fact is made known, makers and users of stationary engines will without doubt see the propriety of retiring from the fray, and leaving the "Gomm" to rotate *ad infinitum* in well-merited triumph at the top of the aeronautical tree. ROTIFER.

### Centres Again.

Sir,—I hope I may be allowed to reply briefly to Mr. Warde-Fox's last letter.

Par. 1.—Please name machine; and pilot (if still living).

Par. 2.—Tut-tut!

Par. 3.—First lines: I agree absolutely if "centre of drift" is meant by "in line with chief mass" and "C.P." Later lines: I am not quite clear as to what is meant, but agree that centre of thrust should be in same horizontal line as centre of drift, and C.G. in same vertical line as centre of upward pressure and below it.

Par. 4.—For meaning of word "essential" see dictionary.

Pars. 5 and 6.—Perhaps.

Par. 7.—May I restate my case? The centre of thrust being in line with centre of drift, the centre of thrust is always lower than half-way below the planes, if these are of equal size. By taking moments about a point midway between the planes, it is obvious that the moment in one direction due to the drift of the undercarriage is greater than the moment in the other direction due to drift to cylinder heads, passenger's head, tanks, etc., most of which are only a little above, or, indeed, actually below the point considered, as in Avro and Bréguet.

Please forgive my loose use of the term centres.

VENTRE À TERRÉ.

### Aviation in South Africa.

Sir,—The Aeronautical Society of South Africa is getting on. Captain Spelterini, the balloonist, has been here, and took up in his balloon several passengers at Johannesburg.



THE HARDWORKING AVRO SCHOOL AT BROOKLANDS.—Chief Pilot Raynham at the lever, and (left to right) Messrs. Sippe, Wheatley, Noel (certificated pilot), McCallum More, Young, and Hunter (certificated pilot).

# "BLACKBURN" MONOPLANES.

TUITION  
Exhibition Flights Arranged

The BLACKBURN AEROPLANE Co.,  
BALM ROAD, LEEDS.

## MULLINER

LONG ACRE, LONDON, &  
NORTHAMPTON, LTD.

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.

Sole Agents for **NORMALE PROPELLERS**

The Most Efficient  
Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race; the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA.

TELEGRAMS: "AERO RIFT," LONDON.

# £650

READY TO FLY.

## The "Flanders" Monoplane

(TWO OR THREE SEATS).

60-80 Green Engine ("Circuit of Britain" type).

65 m.p.h. (timed). [L. Howard Flanders, Brooklands, Weybridge].

## T. W. K. CLARKE & Co.,

SPECIALISTS IN OXY-ACETYLENE  
WELDED WORK.

CLARKE PROPELLERS.

CLAPPE LANDING WHEELS.

CLARKE ACCESSORIES.



Send for our "FLIGHT FITTINGS" Catalogue.

Fully Illustrated : : : : By Post 3d.

Crown Works: KINGSTON-ON-THAMES.

## An Education in Aviation

"can be obtained from the following books:-

"The Art of Aviation," 10/6  
By R. W. A. BREWER ... ..

"Monoplanes and Biplanes," 12/6  
by GROVER LOENING ... ..

"The Aeronautical Classics," 1/- EACH  
Six numbers, by Sir GEORGE  
CAYLEY (1810), WENHAM (1840),  
and other early writers ... ..

Post Free from—

THE AEROPLANE, 166, PICCADILLY.

## AVIATION POSTERS

STRIKING IN DESIGN

and

CORRECT IN DETAIL

THE AEROPLANE, 166, Piccadilly, W.

Telegrams: "Aileron, London."

'Phone: 5407 Mayfair.

## THE BENEY PROPELLER

British Design :: ::  
British Manufacture

AS USED ON THE "FLANDERS" MONOPLANE.

ROBERT BENEY, 7, Carlisle Street, Oxford Street, London, W.

## E. T. WILLOWS LTD.

"City of Cardiff" Type, to carry 4, £900 complete.

New Light 2-Passenger Model - - £370

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM





His coloured photographs of Alpine and other scenery are exceptionally fine; he has been asked to show them at the Royal Alpine Club. He is now on his way to England. He has been elected an honorary member of this society.

John Weston is giving flying demonstrations at various centres, and will soon be taking pupils. We are arranging with the Royal Aero Club concerning the issuing of certificates; that is to say, whether they will recognise our certificates. I enclose you a revised list of officers.

The Governor of Lorenzo Marques is also being elected a vice-president, and we hope to establish a branch of the society there.

Wishing you every success with your new venture, THE AEROPLANE,  
Pretoria. A. M. ROGERS (Major, R.E.S.).

The following is the list of officers to which Major Rogers refers:—

Patron.—Lord Gladstone (General Botha has been invited and the society is awaiting reply).

President.—The Hon. Johann Rissik, Administrator of the Province, Transvaal.

Vice-Presidents.—General the Right Hon. Lord P. S. Methuen, G.C.B., G.C.V.O., C.M.G.; Sir Thomas Cullinan; Sir Johannes van Boeschoten; George Albu.

Council.—Dr. F. V. Engelenburg, vice-chairman, Pretoria; Major A. M. Rogers, R.E.S., chairman, Pretoria; Captain Geo. Monreal, Pretoria (hon. sec.); Captain A. G. Board (certified pilot, R.Ae.C.), Pretoria; James Macintosh, Pretoria; Gerhard Rissik, treasurer, Pretoria; W. Burningham White, Johannesburg; Ferdinand Prior, treasurer, Johannesburg; Dowell Ellis, Johannesburg; F. H. Davis, Johannesburg.

### The Aerial Farce.

Sir,—With regard to the aerial fiasco, now fizzling and spluttering to an ignominious end, highly suggestive (as, indeed, the whole affair has been) of the performance of a damp Chinese cracker, and the position as reported in this morning's papers: The only reparation the organisers of the business can make to M. Hubert for the injuries he has sustained in attempting to carry out their precious scheme is a pecuniary one. Surely, as a matter of common fairness and decency, some respectable compensation (I don't say *adequate* compensation, for that is not in their power) should be made to him as a first charge on the proceeds.

This is not a matter of "charity," it is simple, ordinary justice; and I am exceedingly sorry to see the committee endeavouring to retire behind hard-and-fast legalities. It does not look pretty, to say the least. And when one of them calmly dismisses the subject with, "Every aviator knew the risk he was taking," and "The committee had demonstrated what they wished to show" (as if they were really quite

pleased with themselves!), words fail me. For once in my life, I am absolutely at a loss for any terms which will express my feelings. I can only most sincerely hope that aviators do now know the risks they run in taking part in any scheme of the kind.

About the only people who come creditably out of the business are the aviators themselves, and notably Mr. Hamel, who has acted admirably throughout in the most indifferent cause. He risked his life on the opening day to save the whole thing from being a fiasco at the outset, and has now very generously taken on himself the less dangerous, but equally difficult and probably far more unpleasant task, of trying to induce the "committee" to do what they ought to have done immediately and without any prompting.

If he does not succeed—and this is what I started out to say—would it be worth while suggesting that everyone who sent a letter or card by the aerial post should contribute something towards a fund for M. Hubert, to be organised by some responsible person or institution? I don't like this sort of thing, as a rule, but the case is exceptional; and if only half or a third of the people who threw away their shillings and sixpences so light-heartedly in order to get a little passing amusement out of a very silly and dangerous game were to respond, a respectable sum might be put together. Of course, if the powers that be behave decently nothing of the kind should be necessary.

Personally, I am thankful to say I have no share in this particular piece of idiocy on my conscience. Had I sent as much as one solitary letter or card by the aerial post I should never be able to forgive myself; I should always feel it was that that turned the scale.

Boxmoor.

M. L. ELLIOTT.

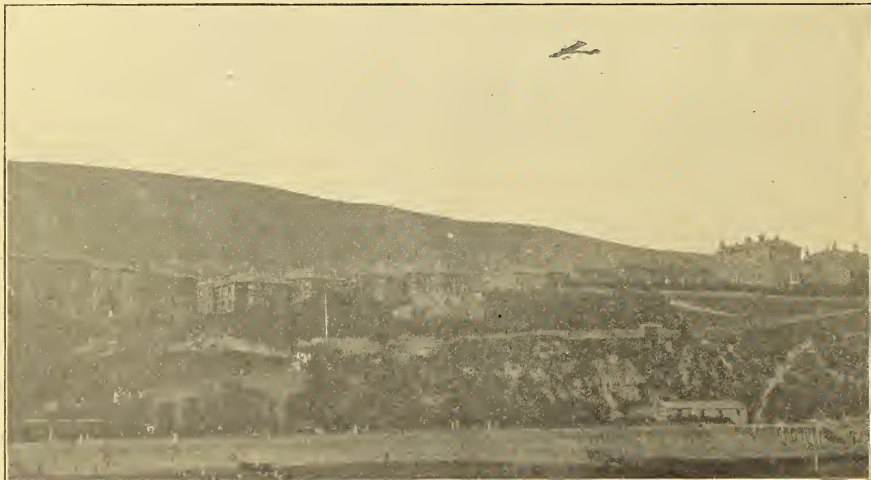
### A Gliding Hill.

Sir,—In reply to your inquiry in THE AEROPLANE of September 21st, I beg to suggest a gliding hill within an easy reach of London. The hill, which is situated in Perivale, and is known as Horsendon Hill, has a gradient of about 1 ft. in 6 ft., facing west.

W. TIPPER.

### More Michelin Attempts.

On September 9th, Prevost, on a Deperdussin, flew 835 kms. in less than 10 hours, including stops, but hurt his hand on jumping out of his machine at the third stop and was unable to continue. On the same day Pascal, also on a Deperdussin, flew 100 kms., but was stopped by Grône troubles. On the 13th, Fischer, on a Farman, started at 1.16 a.m. with a big headlight on his machine, and flew almost three laps of the 50-km. course, which was marked at each end by big fires, when something went wrong and he had to come down. On the same day Prevost had another try, but was brought down by bad weather at 100 kms.



James Valentine on his Deperdussin leaving Ventnor for his tour of the Aerodromes,



### The French Way.

Captain Félix, ex-holder of the height record, and organiser of the aviation section of the French army manoeuvres, has been promoted for his good work. Auburn, Tabuteau, and Védries, on duty as reservists, have been given the ribbon of the Legion of Honour, and Legagneux, Lorian, and Sub-Lieutenant Martinet, also reservists, are on the next list for the Legion. When are some of our Air Battalion officers going to get their steps, or the D.S.O.? Air Battalion work certainly ought to count as active service.

### A Dirigible Makes a Journey.

The Astra dirigible *Adjudant Réau* made a really fine voyage on September 19th. Starting at 5.11 p.m. on the 18th, with nine people on board and 2,000 kilogrammes of petrol and oil, she went up under command of Lieut. Caussin, with sealed orders. Going eastward, she passed over Meaux, Epervy, Chalons-sur-Marne, and St. Menehould to the frontier fortress of Verdun. Turning south there, she reached Toul, the next fortress, at midnight. Thence she went east to Nancy, and then south again to Epinal and Vesoul, near Belfort, so completing a tour of the eastern frontier posts. There she turned north-west for Paris, and got to Troyes by 10 a.m., having had calm weather so far, but at Troyes she met the wind, and took from then till 2.34 p.m. to reach Issy again, having been 218, 230, in the air, and having covered 80 kilometres at a speed of 40 kms. per hour, or about 24 miles per hour; though that does not sound much after the high speeds to which the aeroplane has attained. The machine is built of Hutchinson fabric, is 94 metres long by 14 metres maximum diameter, and she has a volume of 9,250 cubic metres. She is driven by two engines of 120 h.p. each.

### The Increase of Distance.

The following table gives a good idea of the extent to which the long-distance capabilities of the aeroplane have been developed during the past five years. It would perhaps be more correct to say during the past three years, for it was not until 1908 that the first genuine sustained flight was made, previous efforts being little more than hops—

Santos Dumont	Bagatelle	Nov. 12, 1906	240 feet
Henry Farman	Issy-les-Moulineaux	Oct. 25, 1907	840 yards
"	"	Jan. 15, 1908	1,021 yards
"	"	Mar. 21, 1908	1 mile 441 yds.
Leon Delagrangé	"	April 11, 1908	2 miles 789 yds.
"	Champ de Mars, Rome	Sept. 30, 1908	7 miles 1,628 yds.
"	Issy-les-Moulineaux	Sept. 16, 1908	15 miles 136 yds.
W. Wright	Camp d'Auvours	Sept. 21, 1908	41 miles 1,094 yds.
"	"	Dec. 18, 1908	62 miles 653 yds.
"	"	Dec. 31, 1908	77 miles 1,674 yds.
Paulhan	Betheny	Aug. 25, 1909	83 miles 1,320 yds.
"	"	Aug. 26, 1909	96 miles 1,116 yds.
Henry Farman	"	Aug. 27, 1909	112 miles 880 yds.
"	Mourmelon	Nov. 3, 1909	146 miles 761 yds.
Labouchère	Reims	July 9, 1910	212 miles 880 yds.
Olliviers	"	July 10, 1910	245 miles 818 yds.
Tabuteau	Etampes	Oct. 28, 1910	291 miles 125 yds.
Legagneux	Pau	Dec. 21, 1910	322 miles 762 yds.
Tabuteau	Buc	Dec. 30, 1910	365 miles 813 yds.
Olliviers	Kiewit (Belgium)	July 16, 1911	390 miles 1,100 yds.
Fourny	Buc	Sept. 1, 1911	450 miles

### Strength and Accuracy.

An interesting point in connection with the wonderful escape of Lieut. Reynolds, of the Air Battalion, recently, is the fact that the Clift compass which was fitted to his machine was found to be still in working order after the smash, although one of those who saw it after it had been salvaged from the wreck described it as looking as if it had been run over by a motor-car. It has been returned to Mr. Clift for repairs, and will be quite fit for use again.

### A Matter of Material.

Congratulations to the Short Brothers on the result of the "May Fly" accident. Apparently the only thing that did not give way about that hollow fraud was the Short balloon-cloth with which it was covered. When the framework in the centre buckled, one of the balloons inside must have been nipped by the metal, and so caused to collapse. Then the neighbouring balloons punctured and more framework went, till the whole centre section was hanging in the water supported by the remaining balloons in the two ends. If the Short fabric had not held the wreck together, it seems likely that the two ends would have sailed skyward independently. Incidentally, it appears that for months the whole thing has simply been held together externally and supported internally by the balloon-cloth supplied by the Short Brothers. Hence these felicitations.

### The Most Efficient Type of Model.

While watching the model flying at the Crystal Palace one day recently, I was struck by the sameness of the functional design of almost every machine there.

The tail-first type, which is so extensively used, is a very stable type, it is true, but, in the nature of things, it cannot be as efficient as the non-lifting tail type, which, in addition, is more stable: it will easily be seen that for a given alteration of attitude in every case the non-lifting tail gives a greater distance between the centre of pressure and the centre of gravity—i.e., a greater righting moment—than the super-lifting elevator.

The difficulty, of course, is due to the fact that whereas the tail-first type, as usually built, has its centre of gravity naturally coincident with the centre of pressure, in the case of the non-lifting tail type special arrangements must be made to suit the use of the elastic motor.

The simplest way to overcome the difficulty is to make use of two tractor screws on a fairly long frame—say one and a-half times the span. This will mean that the main plane must be about two-fifths along the frame, leaving three-fifths of the frame, or nine-tenths of the span, for distance between tail and main planes.

A second point is the scarcity of biplane models. It should be remembered that with a gap of one and a-quarter to one and a-half times the span there is very little chance of interference losses. Once this is understood, aero-model makers should soon start to put themselves to the extra trouble of biplane construction for the sake of the greater strength it affords with the same weight.—P. K. T.

### Model-Flying Extraordinary.

Some extremely good demonstration model flying was done from September 4th to September 18th by Mr. R. F. Grimmer, with one of the Mann model monoplanes, in the course of daily demonstrations at Felixstowe, where no machine of any kind had ever been seen before. Consequently, there were very large crowds of spectators, who were much impressed by the flights, especially those made in strong winds. The flying averaged four or five hours a day, and Mr. Grimmer struck on the original idea of organising a body of *gamins* as "fore-caddies." These were posted every 100 yards or so down wind for half a mile, so that the machine was brought back by relays, and consequently there was seldom more than 15 minutes' wait between flights.

Only one machine was used throughout, and it flew on an average six miles a day, making a total of 84 miles; five flights exceeded the half-mile, and on three days the anemometer registered wind speeds of 40 to 60 miles an hour. The repair bill amounted to 2s. 7d.—2s. 6d. for a new rubber motor fitted on the eighth day, and 1d. for wire to replace a broken hook. This works out at about a third of a penny per mile.

### New Pilots.

At the last meeting of the Royal Aero Club Committee the following aviators' certificates were granted:—

136. John Brereton (Bristol).
  137. Albert Hunter (Avro-Farman).
  138. Alfred Dunkinfield Jones (Blériot).
- The following airship pilot certificates were granted:—
7. Lieut. A. E. Fox, R.E.
  8. Capt. E. M. Maitland.

### The Visitors' List.

Mr. C. Phillips Vierke, of Paris, who had just paid a visit to the Hendon Aerodrome, said that the difference between the attitude of the people in this country and that of the people in France as regards aviation was most remarkable. Although all the big constructors have left the dangerous aviation ground at Issy-les-Moulineaux and are carrying on their big schools either at Chalons or Etampes, yet the French public flock in thousands to Issy day after day and crowd the ground if they can obtain admission. On Sundays they sit on the fortifications in hundreds of thousands to watch the flying, whereas on the Sunday at Hendon he found merely tens of people where there should have been thousands. He also remarked that every man one speaks to in France takes an intelligent interest in aviation, and can understand points about machines and their performances which in this country seem to be regarded as meant exclusively for those with a deep technical knowledge. Mr. Vierke has certainly sized up the situation fairly well, but it is to be hoped that before very long even the slow-witted Englishman may begin to understand a little about flying. Already both the Services and many of the better class sporting set are waking up to the

possibilities of aviation as a sport, and the next few months will probably see a very big difference.

Mr. Warren, of the Lanark Aerodrome, reported that excellent progress is being made there. Four pupils are now at work, and several others are in prospect. Mr. Ewen has been doing excellent cross-country flying on the little 28-32 h.p. Deperdussin, and things generally in the East of Scotland seem to show signs of waking up.

Messrs. Howard Flanders and Ronald Kemp called on their way from Brooklands to drive round the course over which Mr. Kemp proposes to fly for the Michelin Speed Prize. After having considered the Brooklands-Andover-Hendon course they came to the conclusion that the country was too much wooded, and that there were not enough really good guiding points, so the probability is that the course used will be that from Hendon to Bedford, Huntingdon, Cambridge and back.

Mr. A. Hunter, who took his certificate about ten days ago at the Avro School, called to discuss future movements. He has had quite a good deal of experience of flying in France, as well as in this country, and he rather favours the idea of starting an aviation school somewhere in the North, either on his own account or in partnership with someone else. There is certainly plenty of money in the North, and, judging from the number of high-powered cars of a sporting type sold in the manufacturing districts of the North, there must be quite a number of young sportsmen, brought up on motor cars rather than on horseback, to whom flying should appeal, and once such a school got fairly going it ought to be a success.

Mr. A. V. Roe, discussing Michelin flights, explained that the machine on which Raynham is making his attempt was really intended simply for a school machine, the idea being to build a bigger machine with a 60-80 Green engine for the actual Michelin flight. However, Raynham, in tuning up the little 35 h.p. Avro-Green, took such a fancy to it that he has persuaded the school pupils to forego their rights to the machine till he has made his Michelin attempts. The pupils have entered into the spirit of the thing in a thoroughly sporting manner, and are each and all of them doing their best to help Raynham in every possible way. Certainly, after all the work that has been done on Avro machines, the firm and its pupils deserve some public success.

Miss Gertrude Bacon, the well-known writer and lecturer on aviation, called to discuss further passenger flights which she hopes to make at an early date. Miss Bacon was the first Englishwoman to go up as a passenger on an aeroplane, which she did at the first Reims meeting, and she is so far the only Englishwoman who has travelled by biplane, monoplane, dirigible, and spherical balloon, so she is particularly well fitted to lecture on aviation. Prior to her forthcoming lecturing tour Miss Bacon hopes to make some more flights, so as to compare the modern machine with the original Sommer on which she flew at Reims and the somewhat elderly "Big Bat" on which she flew at Brooklands.

Mr. Longstaff, who has been selected to pilot the Howard-Wright-Green biplane in the Michelin prize competition, called to talk over Michelin rules. At the time of calling Mr. Longstaff had not got his pilot's certificate, but as a pupil at the Blondeau school he has been doing quite a large amount of regular flying, and has been performing extremely well. He said he already does the necessary tests for both right-hand and left-hand turning a number of times, and so had no difficulty whatever in passing the certificate tests when he was called upon to do so.

Mr. C. Fleming-Williams, the well-known artist, whose drawing, "A Mean Advantage," has been so much appreciated, called to discuss hydro-aeroplanes. Mr. Fleming-Williams has a great belief in this form of vehicle, with which he has been making some interesting experiments at his home in Essex. He promises before long to give the readers of THE AEROPLANE some knowledge of the results of his experiments, as well as some arguments as to the suitability of the hydro-aeroplane for use under varying conditions for naval work.

Mr. Leo Jezi, whose little 40 h.p. biplane with twin tractors was the first successful machine of its type in the world, said that his new machine had just made its first appearance. Mr. Jezi goes to work systematically and cautiously; consequently, his first trials were purely intended to test the strength of landing chassis, and he made no real attempts to fly the machine, contenting himself with short hops and with running at full speed over the rough surface of the Eastchurch ground. These tests have been quite satisfactory, and he hopes to have the machine flying before long.

Mr. Duigan, who has been spending the last few weeks investigating engines and machines, has now definitely ordered an Avro biplane of the latest type, into which he intends to

fit his 40 h.p. four-cylinder horizontal Alvaiston engine. With such power available, he should have no trouble in doing plenty of flying. Mr. Duigan confesses to a predilection for horizontal engines, and is already the owner of a horizontal-engined car and a horizontal-engined motor bicycle, both of which are doing excellent service.

The versatile Mr. Valentine was most entertaining on the subject of his flights at Burnham-on-Crouch. Apparently, flying over a motor boat regatta can cause quite as much excitement as flying at Henley. However, Mr. Valentine, being also a motor boat pilot, was quite sympathetically received. After flying at Burnham, he returned to Eastchurch, thus being the first aviator to cross the mouth of the Thames. At the time of his visit to THE AEROPLANE his machine was at Eastchurch, and he himself was planning a little "Circuit" on his own account, in the course of which he proposes to visit the chief flying grounds of Great Britain. Owners of aerodromes who would like to see his racing Deperdussin performing in its best style might do well to send him an invitation (c/o THE AEROPLANE), and no doubt a visit could be arranged. Mr. Valentine and his Deperdussin have done an immense amount of highly educative work already, and he deserves to be encouraged to do still more.

### Manchester Aero Club.

Annual General Meeting of Manchester Aero Club will be held on Thursday, October 19th, at 7.30 p.m. at Midland Hotel, Manchester. F. AKENHEAD (Clerk to the Committee).

### Bristol Model Flying.

A Model Aeroplane Competition will be held on Saturday, 30th inst. Competitors meet at port of Blackthorn Hill, at Giles' Athletic depot, 3 p.m.; flying commencing on Downs at 3.30 p.m. Interested competitors please communicate with L. W. ENOGBA, 67, Redcliff Hill, Bristol.

### The Manchester Aero Club.

Flying meeting held on Saturday, September 23rd, at Trafford Park Aerodrome. In spite of wind and rain a good attendance and a dozen or more excellent flights. Three of members qualified for Third Class Certificate; best flight made by Mr. Williamson, whose model flew 560 feet. Following success of meeting numbers of new members enrolled, and it was decided to hold another meeting on September 30th, at 2.30 p.m., at same place. Above flights count towards prize, which takes form of passenger flight in an "Avro" biplane at end of season. Season 1911-12 opens on September 30th. All members of Manchester Aero Club are also Honorary Members of Model Club and are invited to attend Model Competitions. Prospective members kindly communicate with secretary, Mr. KINSMORE KINSA, 40, Bignor Street, Cheadham.

### Birmingham Aero Club.

First of series of monthly meetings, to be continued throughout the winter, will take place at the Colonnade, New Street, on October 2nd, at 8 p.m. A technical paper will be read and followed by a discussion. Mr. Ernest Noble (King's Heath) will entertain the company afterwards with "Some Aeronautical Arguments." All interested in aviation, especially ladies, are cordially invited.

### Bexhill Model Aero Club.

Open Model Aero Contest held in Egerton Park in connection with Dog and Pet Show on Wednesday, 13th inst. Large crowd impressed by splendid flying. Results: Distance—1st, Hiscox, 2nd, Hill Reid; Duration—1st, Hill Reid (53 sec. rds), 2nd, Gwynne (52 sec. rds); Best All-round Machine—1st, Gwynne (by reason of his splendid flying after the competition with his Mann monoplane). Both other prize winners flew their own designed monoplanes. In addition, special prize was won by Hiscox for the neatest piece of workmanship in the Exhibition run in connection with the Show. J. ALAN HILL REID (Hon. Sec. B.M.A.C.C.), "Craigmore," Bexhill-on-Sea.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AILBORN, London.

Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM		ABROAD	
3 months, post free	- 1 8 d.	3 months, post free	- 2 9 d.
6 " " "	- 3 3 6	" " "	- 5 6
12 " " "	- 6 6 12	" " "	- 11 0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.



## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted **ONLY**—18 words **1/-**. 1d. per word after.

### PATENTS.

**AERO PATENTS.** Inventors advised by first-class aero experts and taught flying, their inventions secured, manufactured and tried in the firm's own works, flying grounds and aeroplanes. Book of Instructions post free on mentioning this paper. W. P. THOMPSON & Co., Chartered Patent Agents and Aero Experts, 6, Lord St., Liverpool, and at London, Bradford, Birkenhead and Freshfield.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS. **THE AEROPLANE** will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to **THE AEROPLANE**, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

### MACHINES.

**HANRIOT MONOPLANE**, "Libellule" Racing type, complete with Engine. 56-60 m.p.h. New with spare wings £750. Any reasonable offer accepted. Apply to **THE GENERAL AVIATION CONTRACT CO.**, 30, Regent Street.

**FOR SALE**, new **BLERIOT** monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new **HOWARD-WRIGHT** biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**MACHINES.**—"Avro" Biplane, new, with 30 H.P. Green £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**MONOPLANE**, quite new, 45-h.p., with all accessories. Cost over £900; will sell for £160, or Engine separately. Complete with spares.—Box No. 341.

**MILITARY** type Farman; Gnôme Engine, cases and spares for sale, price £650. Instalments accepted from responsible purchaser. Apply Box 334, **THE AEROPLANE**.

### ENGINES.

**FOR SALE.** Genuine Antoinette engine, complete, in thorough working order. Also Humber 3-cylinder aero engine. Manager, **Portholm, Huntingdon.**

**50-60** H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—**THE AEROPLANE.**

### PROPELLERS.

**PROPELLERS.**—"Avro" Propellers of proven efficiency 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best, Sole British Agents, **Geo. V. Goodchild and Partner**, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### TUITION.

**TUITION**, with or without limited liability, Blériot XI.; personal instruction.—**CHANTER, Aerodrome, Hendon.**

**TUITION.**—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. More certificates have been secured on the **AVRO** than on any other "All-British" Aeroplane.—A. V. ROE & Co., Brownsfield Mills, Manchester.

### TUITION—Continued.

**L ANARK AERODROME, N.B.** Tuition for R.Ae.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to **W. H. EWEN.**

**BARRHEAD FLYING SCHOOL.** Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. **SCOTTISH AVIATION Co.**, 185, Hope Street, Glasgow, or Barrhead.

### EMPLOYMENT.

**ENGINEER** wants situation as works foreman; 3 years foreman for leading Aeroplane Maker.—"S," "Oakleigh," Milner Road, Merton, S.W.

### INVESTMENT.

**£5,000** CAPITAL wanted for extending Profit-paying Aeronautical Business, making and selling Aeroplanes, and carrying on Flying School at which many Certificates have been won.—Box 340, **THE AEROPLANE.**

**AERONAUTICAL** Business for Sale, established three years, including two full-sized biplanes that have flown (British designed, patented) and patents for Control Lever, Automatic Stability, Brake, Disappearing Wheels. Well equipped works and flying grounds. Price £3,000 part cash.—**MALLOWS & Co.**, Adelphi House, Strand, London, W.C.

**GOOD** Business in Models and Aeroplane Parts for Sale, in Midland town. Excellent connection. Owner moving to London. Replies to Box 326. **THE AEROPLANE.**

### MISCELLANEOUS.

**PLANES, LIMITED**, Duke St., Birkenhead.—Monoplanes guaranteed to take purchaser as passenger 30 miles flight before delivery. 60 H.P. Green engine, 50 H.P. Isaacson, 30 H.P. Anzani, and 120 H.P. Delahaye on stock for aeroplanes and motor boats. Purchasers taught flying by Aero Club pilot. Hangars to let.

**HANGARS** TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, **Portholm, Huntingdon.**

### SALE AND EXCHANGE.

**EVERYBODY'S CONVENIENCE SUITED.** Genuine bargains. Send for weekly list of Aeroplanes and Engines. Cheapest on the market, sale or exchange.—**WESTON HURLIN & Co.**, P.F. Building, 13, Milford Lane, Strand.

### FLYING MODELS.

"**MANN**" MONOPLANE. The most economical model to fly. In the recent demonstrations at the Felixstowe Park Aerodrome, Mr. Robert P. Grimmer flew ONE "Mann" Monoplane an average of six miles per day for a fortnight, making a total of 84 miles. No less than five flights exceeded the half mile and on three days the anemometer registered 40-50 miles per hour, no other model being able to fly at all. The repairs bill amounted to 2/7; 2/6 for a new rubber motor fitted on the eighth day, and 1d. for wire to replace a broken rubber hook. This works out at 1/ of a penny per mile. Refuse all imitations unaccompanied by the signed guarantee. Genuine "Mann" Monoplanes 15/-, parts for constructing 5/-, geared winders (not converted egg-beaters) 5/-. From **WELLS BROS.**, 14, Wellington Square, Hastings, and agents throughout the world.

**LOOK OUT! NO TRASH.** 6/-, complete with geared winder, 1/4-mile Monoplane, prize winner. Send stamp for list of cheapest accessories and model materials.—**WESTON HURLIN**, 13, Milford Lane, Strand.

"**M.S.C.**" MONOPLANE.—A genuine 1/4-mile flyer with geared winder, post free 8s. 6d.—**MURRAY STANGER Co.**, 20, Brograve Road, Tottenham, N.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, SEPTEMBER 28th, 1911

No. 17

## "BRISTOL"

### Flying Schools

AT

SALISBURY PLAIN and BROOKLANDS

. . . POSSESS . . .

The Best Equipment

The Finest Instructors

AND

The BEST RECORD

:: IN THE COUNTRY ::

Pupils are taught, not merely to fly, but also how to assemble and adjust their machines and motors.

RAPID AND THOROUGH TUITION IS ENSURED  
AND THERE IS NO WAITING FOR MACHINES.

SPECIAL TERMS TO NAVY AND ARMY OFFICERS.

Write for particulars to—

**The British & Colonial Aeroplane Co., Ltd.,**  
**FILTON, near BRISTOL.**

"THE AEROPLANE," OCTOBER 5, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

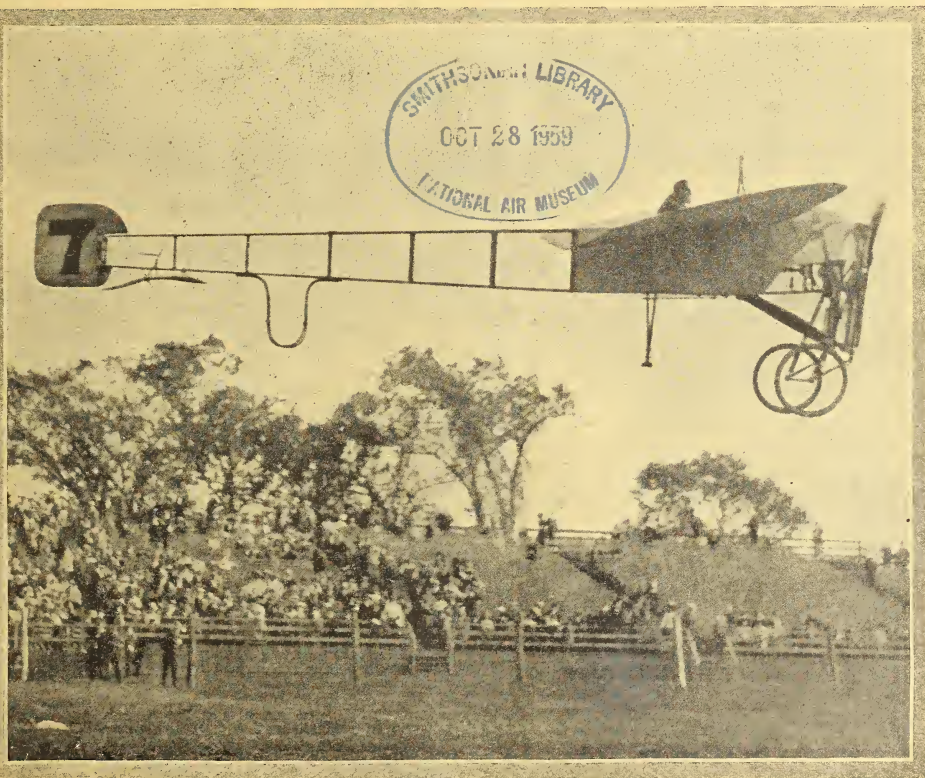
12  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.

THURSDAY, OCTOBER 5th, 1911.

No. 18

## The Prize-Winner.

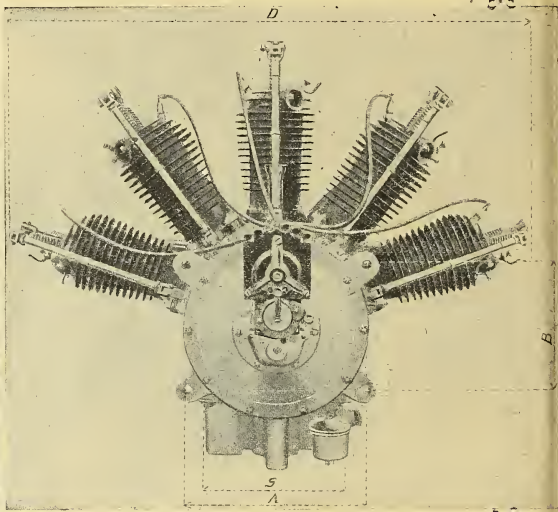
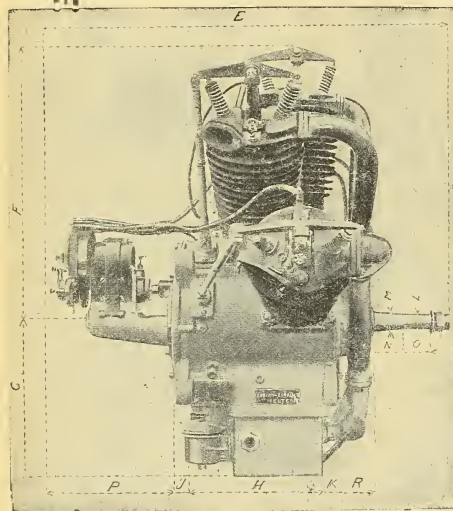


Mr. T. Sopwith at Boston, finishing his winning flight round the Boston Light, on his 70 H.P. Blériot.

SMITHSONIAN INSTITUTION OCT 28 1959



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40/50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
EDITORIAL OPINIONS... ..	411
AIR CURRENTS ... ..	416
POINTS OF DESIGN ... ..	418
THE WEEK'S WORK... ..	420
THE AEROPLANE SECTION R E. ... ..	422

	PAGE
THE BRITISH CREW IN AMERICA ... ..	423
THE LIFT OF PLANES ... ..	425
CORRESPONDENCE ... ..	426
THE VISITORS' LIST... ..	428
NOTES FROM THE CLUBS ... ..	430

## Editorial Opinions.

**The French Military Trials.** Last Sunday the French military competitions opened, and it will, therefore, be of some interest to know how these are to be carried on.

First of all, the machines are to undergo an examination to ascertain whether they are constructed under certain conditions which make for safety.

They are then to make three flights, each time carrying a load of 300 kilogrammes, or roughly 700 lbs. With this load they are to land in long grass, meadows, and ploughed fields, after which the machines are to get off from such ground and make a flight of a few minutes and again come down on similar ground. After these test flights the machine is to be brought back to the starting point, either by rail or road, not by air, the idea being to test the ease with which the machine can be taken to pieces and reassembled.

This being accomplished, another flight is to be made with the same load, in the course of which the machines are to make an out-and-home journey, without landing, at a speed of not less than 60 kms. per hour. This last condition really is decidedly interesting, as it shows the advance that has been made in machines during the last few months. When the rules were made, 36 miles per hour was considered a comparatively respectable speed for an aeroplane, whereas if the rules were made to-day it would be safe to insist upon a minimum limit speed of 60 miles per hour, for it must be fairly obvious, even to the intelligence of a British Master of Ordnance, let alone a Frenchman, that a machine which only flies at 36 miles per hour is utterly useless for military purposes, as it can be broken up at any moment by one of the fast single-seat monoplanes, and the more passengers it carries the more wasteful it will be of human life in actual warfare.

Having completed this so-called speed test, the machines will be required to reach a height of at least 500 metres in fifteen minutes. This is an equally absurd test, because any self-respecting machine would reach the required 1,500 feet in something like five minutes, and, anyhow, 1,500 feet is far too low for a minimum test of a military machine. At 1,500 feet a machine is fairly within rifle range, and so this would be utterly unsafe as a regular flying height over an enemy's country. It would only be permissible for an aviator to come down so low if he were flying a small very fast machine which was hard to hit, and made a dive to that height, or rather to that lowness, in order to acquire some particularly valuable information concerning details of the

enemy's manœuvres which made it worth while to take a very big risk.

For purposes of practical utility the minimum height in this test which should pass a machine for military use should be at least 1,000 metres. As it is, under these conditions it will be quite possible for certain manufacturers to plant on the French Army still more slow, inefficient, passenger-carrying biplanes, such as the French Army possesses in unnecessarily large numbers, in spite of the fact that the officers who fly them are by no means in love with their mounts.

Competitors will be able to make these flights at any time during the month of October, and will be able to make any repairs necessary through accidents during the tests, but if it should become necessary to put in a new machine or a new engine owing to such accident, the new machine or engine must start the whole test over again.

Having passed all these tests, which should be comparatively easy, except for the excellent starting and landing tests, the machines will then be put through the final test for classification for prizes.

This test consists of a flight of 300 kilometres without landing, carrying a load of 300 kgs., and must be made on one of several days fixed by the examining committee. This, of course, would be really quite a good test, if only the speed had been higher. There is, however, one saving quality about it, which is that, unless one particular machine happens to have wonderful luck in the way of weather, the slow machine will probably be brought down where a fast, properly designed machine will get through without trouble.

**The Enormous Prizes.** The prizes are simply enormous, compared with those to which we have been used in this country. The

first prize is a sum of one hundred thousand francs (£4,000), paid in cash to the winner in exchange for the winning machine, which will probably cost four to five hundred pounds to build.

In addition to this the constructor of the machine will receive an order for ten machines more, which will be bought at the rate of 40,000 francs each, or £1,600, assuming that the machine merely averages 60 kms. per hour. But there is, in addition, a supplementary price of 500 frs. per kilometre for excess of speed over the required 60 kilometres per hour. Now quite a number of French machines, and at least two or three English ones, can reach a speed of 66 miles per hour, or roughly 110 kms., so that, if a machine of this class should win, the constructor

will receive 25,000 francs per machine for excess speed. In other words, the French Government will purchase from him ten machines at the average price of £2,600 each.

Now these machines will probably cost about £400 each to build, and the remaining £2,200 will make quite a handsome profit. So, in all, the winning firm should pocket a profit of something close on £25,000 out of the whole competition.

Besides the first prize winner, the makers of the second and third machines will do quite well, as they will receive an order for six and four machines, respectively, at 40,000 francs, plus the supplementary 500 francs per kilometre, and thus should be able to win £13,000 and £8,000 each, a sum on which it would be well worth speculating a goodly outlay in an attempt to win.

#### British Interest.

It is scarcely likely that when the British Government finally decides to put up a prize on similar lines, as was promised by Colonel Seely some months ago, it will do things on such a generous scale as this; but, subject to an increase in the speed and height tests, the conditions might be very similar, and the prizes might very well take the form of orders for ten, six, and four machines, respectively, at a price of £1,000 each. The Government would thus receive twenty very serviceable machines for £20,000, and would afterwards be in a position to buy quite a number of other machines of a similar kind for somewhat less money.

It is interesting to note that Capt. Fulton, commanding the Aeroplane Section, R.E., is to watch the whole of the tests on behalf of the British Government, and that he will probably have the assistance of Mr. Barrington-Kennett.

Both of these officers probably know as much about aeroplanes as anyone in this, or any other, country, so that they will certainly pick up some

quite useful hints as to how the British competition rules should be formed, and also how "cute" manufacturers will set about complying with the letter and getting round the spirit of the French competition rules. As a result, the British competitions, when at last we do decide to hold them, should be even more interesting than the French ones.

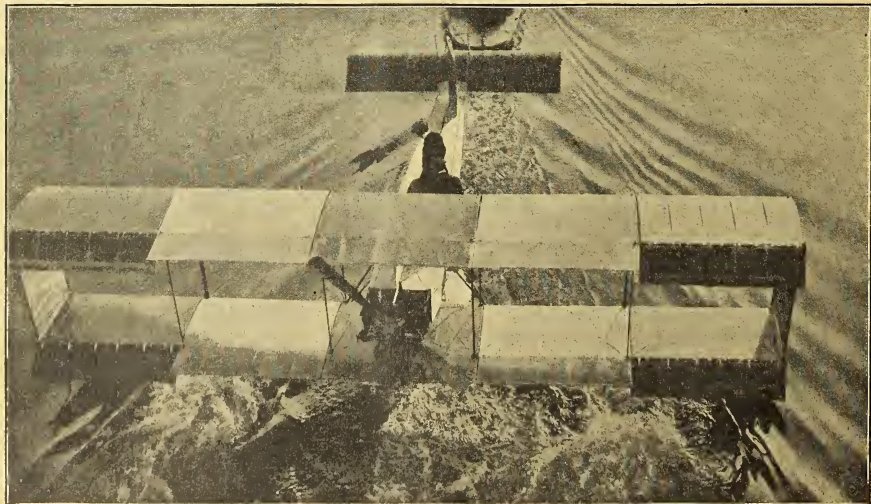
#### Hydro-Aeroplanes and Coast Defence

A week or so ago some space was devoted in these columns to consideration of the possibilities of the aeroplane as a weapon of defence and as a scouting machine for operation with a fleet at sea, and it was then pointed out that for deep-sea service the hydro-aeroplane could not be of any practical use on account of its bulk, and because, no matter what type of float was fitted, it would, in any case be broken up if it came down in a heavy sea.

The use of the aeroplane purely for the purpose of coast defence does, however, offer great scope for the hydro-aeroplane, for several reasons.

In the first place, the coast-defence aeroplane will probably operate from an aerodrome on land near to its port of attachment, and, as an alternative starting and alighting place, will be able to use the comparatively smooth water of a harbour or a sheltered roadstead. Under such circumstances, a machine of a type similar to the Voisin Canard would be decidedly useful, for not only would it be of considerable service purely as a scouting machine, but it would also have decided possibilities purely as a weapon of defence.

It has already been pointed out that for use against battleships the aeroplane can be of very little service except as a scout, because no existing aeroplane, nor any aeroplane likely to be produced for some time, could carry more than one projectile heavy enough to pierce the armour of the deck of a big ship, and even then it would have to drop such a projectile from an enormous height in order to give it sufficient



The Voisin Canard being towed by a launch, for the purpose of testing the floats.



# GREEN'S

ALL-BRITISH AERO

# ENGINES

The most economical power unit in existence. Maintains full efficiency at all speeds. Adopted by H.M. War Office. The power developed is exceptional and weight is low—4 lbs. per h.p.

Write for Catalogue and Details.

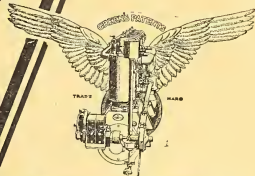
**THE GREEN ENGINE CO.**

(SOLE LICENCEES UNDER THE GREEN'S MOTOR PATENTS SYNDICATE, LTD.)

55, Berners St., Oxford St., London, W.

MAKERS FOR THE PATENTEES—THE ASTER ENGINEERING CO. LTD.

E.H.G.



# £750

**READY  
TO FLY**

## ... THE ... "Flanders" Monoplane

(TWO OR THREE SEATS).

(TUITION FREE TO PURCHASERS).

**60-80 Green Engine ("Circuit of Britain" type).**

**65 m.p.hr. (timed.)**

L. HOWARD FLANDERS, Brooklands, Weybridge.

# HOWARD T. WRIGHT

**110, HIGH STREET,  
MANCHESTER SQUARE, W.**

Telephone  
8574 GERRARD.

Eight Types

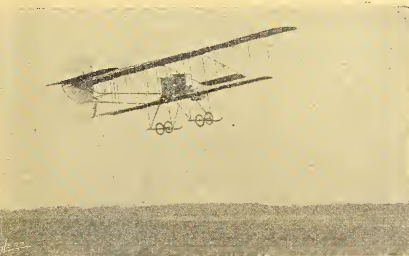
## Monoplanes

From **40** to **80** miles per hour

## Biplanes

From **36** to **50** miles per hour

Catalogue on Application.



Winner of De Forest Prize



velocity to penetrate. At such a height the aim would be considerably less accurate than the aim of a big gun at a much greater distance, and, consequently such a machine would be merely expensive and useless.

On the other hand, for coast defence, a much larger and much slower machine would suffice, and such a machine could carry several projectiles quite sufficiently heavy to do serious damage to torpedo boats or other light, fast scouting vessels, which would of necessity be sent ahead of the enemy's main fleet before making any attack on a port.

Such a machine might be comparatively slow, say only capable of a speed of 40-45 miles per hour, and yet quite able to reach and overtake any torpedo boat which might appear along the coast. It would not, of course, be able to face such a strong wind as a smaller and faster machine, such as will be of necessity used with a fleet at sea; but it is also probable that the enemy's scouting torpedo boats would not set about their work of examining the approaches of a port, or a coast town, in very bad weather either.

It is, naturally, true that for use under such circumstances as those indicated above the ordinary aeroplane, such as used on land, would do equally

well, but there is the great difference that such a machine would only be able to start from and land on solid ground, and would, therefore, be liable to trouble from wind disturbances set up by irregularities of the ground along the coast, whereas the hydro-aeroplane, starting from a harbour, would be immediately in contact with a steady sea wind, and could go out and return in one the velocity of which would be practically impossible, or, at any rate, exceedingly dangerous, for an ordinary land-going machine of the same type and power.

It seems, therefore, quite probable that aeroplanes for use over water will develop two distinct types, namely, a very high speed, very portable, compact, single-seated machine, similar to that mentioned a week or two ago, for use as a scout only in conjunction with vessels on the deep seas, and a larger, slower type of hydro-aeroplane, which will be both a scout and a weapon, for use as a coast defence machine, and which will be a military and not a naval weapon.

No doubt, it will be some years before such machines become part of our regular naval equipment in this country, but other countries are already wide awake to their possibilities, and they are well worthy of the close attention of manufacturers.

#### Mr. Loraine's Success.

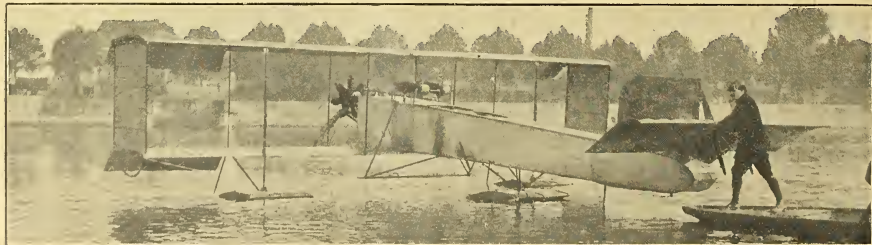
Congratulations to Mr. Robert Loraine on his success with *Man and Superman* at the Criterion. From a box office point of view, the beauty of the play is that, though the author's inner meaning is subtle enough for the keenest intellect, he has overlaid it with superficial buoyancy which appeals to the average Englishman, and so he draws both kinds into the audience; and there is quite a large amount of enjoyment to be got out of seeing the ordinary playgoer having his or her leg pulled by Mr. Bernard Shaw. Mr. Loraine plays John Tanner in his own way, which is to say that John Tanner simply becomes Robert Loraine. After Mr. Granville Barker's performance, in which John Tanner was a kind of Bernard Shaw junior, in looks and deportment, Mr. Loraine is something of a shock, but he is wholly delightful. His acting reminds one of his flying—the thing has simply got to go somehow. But the really subtle thing Mr. Loraine has done is the selection of his "leading lady." Miss Lillah McCarthy, in the Court Theatre version, played Ann Whitefield as a brainy, scheming woman determined on capturing one particular man, and left the impression that the part was an extremely difficult one. Miss Pauline Chase, at the Criterion, plays Ann as just a plain, primeval girl instinctively hunting man, in this case the man who happened to appeal to her as the most difficult to catch; and, so far from giving one the impression that the part was difficult, she convinced one that it played itself. Mr. Mainwaring, who took Mr. Bishop's place at short notice, did excellently as Roebuck Ramsden; Mr. Swinley as the lachrymose and sentimentally English Octavius was splendid. Mr. Edmund Gwenn's 'Nry Straker was as good as ever, which is equivalent to saying that it could not be better, and the

other parts were quite excellently played throughout. Mr. Loraine should be kept busy for a long time to come with this play, and one can only hope that it will not altogether prevent him from carrying out certain aviation projects which he has in view.

#### The French War Office Trials.

The following are the machines actually in competition for the French military tests:—Astra-Wright, Barigaud et Marre motor, 40 h.p.; Borel-Morane, Gnôme motor, 100 h.p.; Hanriot, Clerget motor, 100 h.p.; H. Farman, Renault motor, 70 h.p.; Aviatice, Rossel motor, 100 h.p.; Paulhan, Renault motor, 70 h.p.; Blériot, Gnôme motor, 140 h.p.; Blériot, Gnôme motor, 100 h.p.; Bréguet, Gnôme motor, 70 h.p.; Bréguet, Gnôme motor, 140 h.p.; Bréguet, Canson-Unpé motor, 80 h.p.; Bréguet, Dansette motor, 110 h.p.; Bréguet, Chenut motor, 75 h.p.; H. Farman, Gnôme motor, 70 h.p.; H. Farman, Renault motor, 70 h.p.; H. Farman, Gnôme motor, 100 h.p.; Maurice Farman, Renault motor, 70 h.p.; Savary, Labor motor, 70 h.p.; Voisin, Gnôme motor, 140 h.p.; Voisin, Gnôme motor, 70 h.p.; Voisin, Gnôme motor, 100 h.p.; Antoinette, Antoinette motor, 60 h.p.; Coanda, Gnôme motor, 70 h.p.; Goupé, Gnôme motor, 100 h.p.; Goupé, Chenut motor, 70 h.p.; Astra, Renault motor, 70 h.p.; Astra, Chenut motor, 70 h.p.; Deperdussin, Gnôme motor, 100 h.p.; Deperdussin, Clerget motor, 100 h.p.; Deperdussin, Anzani motor, 80 h.p.; Niépourt, Gnôme motor, 100 h.p.; or thirty machines presented by fourteen constructors, and eleven motors of different makes, of which sixteen are of a power inferior to 100 h.p. and fourteen of 100 h.p. or more, so evidently several makers are relying on power alone to pull them through.

The chief aviators engaged are:—Leblanc, Aubrun, Védrières, Vidart, Herbst, Bobba, Mahieu, Colliex, Bouvier, Ed. Martin, Pascal, and Level.



M. Colliex, pilot of the Voisin Canard, with his machine after one of its trials in the Seine.

# VALKYRIE

## MONOPLANES.

THREE TYPES.

40-80 MILES AN HOUR.

FROM £280,

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES, DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

TUITION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

THE AERONAUTICAL SYNDICATE, LTD.,

ESTABLISHED MARCH, 1909.

COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## BLERIOT

## MONOPLANES

"1911,"

Paris—Rome: 1st—BLERIOT. 2nd—BLERIOT

Circuit of Europe: 1st—BLERIOT. 2nd—BLERIOT

Circuit of Great Britain: 1st—BLERIOT

Circuit of Belgium: 1st—BLERIOT

Moscow—St. Petersburg: 1st—BLERIOT

London—Brighton: 1st—BLERIOT

Hendon—Brooklands: 1st—BLERIOT

London to Paris in one flight (3 hours, 56 minutes) on

BLERIOT,

etc., etc.

CATALOGUE FREE ON APPLICATION.

Terms for tuition at our London School of Aviation sent on demand

Tuition Free to all Buyers of Blériot Monoplanes.

All Correspondence to be sent to:

L. BLERIOT, Sole Manufacturer,  
PARIS & LONDON

Head Office for the British Empire:

BELFAST  
CHAMBERS, 156, Regent St., London, W.

General Manager: NORBERT CHEREAU.

## THE "DEPERDUSSIN"

## MONOPLANE

"The Aerial Yacht"



Machines complete from £450 and upwards.

Valentine, first British Aviator in the Daily Mail Race, on Deperdussin-Gnome 50 H.P.

Ewen's flight across Firth of Forth and back on Deperdussin-Anzani 28-32 H.P.

### AVIATION SCHOOL AT BROOKLANDS.

Special terms to Army and Navy Officers.

Full particulars from

THE BRITISH DEPERDUSSIN AEROPLANE SYND., Ltd.,  
30, Regent Street, Piccadilly Circus, LONDON, W.  
Phone: 280 GERRARD. Wire: "SANTOCHIM—LONDON"

## 'Blackburn' Monoplanes & Propellers.

TUITION.

Mr. B. C. Hucks' double non-stop flight from Weston-Super-Mare, across Bristol Channel to Cardiff and back, was made on BLACKBURN monoplane fitted with BLACKBURN propeller.

Phone: 2222 Central.

The BLACKBURN AEROPLANE CO., Balm Road, LEEDS.

Telegrams: "Propellers," Leeds.

## MULLINER

LONG ACRE, LONDON, &  
NORTHAMPTON, LTD.

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.

Sole Agents for NORMALE PROPELLERS

The Most Efficient  
Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race, the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA.

TELEGRAMS: "AERO RIFT," LONDON.



## AIR CURRENTS.

## More Things which Might be Done.

From America, via the daily Press, comes the thrilling announcement that the Atlantic is to be flown in the near future. Unfortunately, the statement that the proposed feat is to be carried out in instalments, by the aid of a number of vessels stationed along the route, the aviator flying from one to another, comes rather as an anticlimax in comparison with the idea of a non-stop flight, as recently foreshadowed in THE AEROPLANE. We are assured, however, that the countrymen of Glenn Curtiss and Lincoln Beachey have some still more startling performances in view for the effective pulverisation of the obsolete and decaying Eastern Hemisphere, and we have, consequently, been at some pains to secure the following intelligent anticipations of some of these inspiring events:—

Mr. Paracelsus K. Strutt, of Wingville, Arizona, will shortly undertake the unparalleled feat of crossing the Atlantic in a Wright glider. A scaffolding is now being erected on the promenade deck of the Three Star liner *Gyroscopic*, in preparation for her next voyage from New York to Liverpool, and from this the glider will be suspended by a substantial arrangement of strain cable. Each day during the voyage, at suitable intervals between the hours of breakfast, lunch, and dinner, Mr. Strutt will take up his position on the machine, where, negligently disposed in various *déagé* and unconventional, but always graceful, attitudes on the front edge of the lower plane, he will be pleased to receive reporters, camera fiends, autograph hunters, and the various other satellites now indispensable in the performance of a successful flight. "Glider teas," at 4 p.m. daily, will also be arranged, when members of the fair sex may enjoy the privilege of being snap-shotted in artistic groups, engaged in the charming occupation of reviving the Conqueror of the Air, after the fatigues of the day, with China tea and buttered buns. A nominal charge will be made for admission to all the performances, and the proceeds, in accordance with the best traditions of aeronautical society, will be devoted to a charity. The name of the charity is not stated, but it is understood that it will be decided on by Mr. Strutt in consultation with the smoke-room steward.

Mr. Skidmore Sideways intends to paralyse the effete monarchies of the Old World by crossing the Hudson River in a racing motor-car. To allay the apprehensions of friends and the general public, it may be incidentally mentioned that Mr. Sideways will avail himself of some trifling assistance from the monster steam ferry-boat in operation at New York, which has been retained for his exclusive use on this epoch-making occasion. Mr. Sideways will take up a well-chosen position on the stern of the boat, and as the latter commences her journey across the heaving waste of waters, will start the car at the lowest speed, and, with occasional pauses for refreshment, will proceed in the direction of the opposite shore, timing his progress with such marvellous accuracy as to reach the forward extremity of the ferry-boat precisely at the moment of her arrival at the landing-stage. A collection will be made among the spectators to defray expenses, and the surplus (if any) will be devoted to some excellent purpose under the advice of the head waiter at Delmonico's.

Archimedes Altamont, of New Jersey (aged 14 months), has signified his intention of crossing Niagara in his 1 h.p.\* perambulatorplane. There are rumours in connection with the Suspension Bridge as an important adjunct to the—

[At this point our "wireless" was suddenly broken off, owing, as we found on investigation, to the fact that a gifted and popular aviator—whose name neither threats nor entreaties will ever induce us to reveal—had, while soaring over Piccadilly en route for the Geological Museum in Jermyn Street, inadvertently carried away a considerable portion of our Marconi installation on the roof of No. 166 with the chassis of his biplane. We are, therefore, regretfully compelled to leave further details to the imagination of our readers.]

\* H.G.P.: Hired Girl Power.

M. L. E.

There is no truth in the rumour that a company is to be floated shortly with a number of well-known aviators on the board, which, under the title of the "Biplane Tail Refinery Company, Ltd.," will lay down an expensive plant for the recovery of unused\* castor oil from the lower tail-planes of engine-behind biplanes.

Although Mr. Clift informs us that iron tonic has no material effect on his compasses, it would be interesting to hear whether an aviator with iron nerves would detract from their efficiency.

This is not funny; it is merely sad. A presumably intelligent man, who for some years has owned and driven a 14 h.p. car, conversing on aeroplanes with a correspondent, asked: "By the way, what is the propeller for? Is it to cool the engine?" There is even worse to follow, for another motorist, who had actually had a flight as passenger in a monoplane at Brooklands recently, asked exactly the same question. In good sooth we are an intelligent nation!

From *The Sphere*, August 5th, 1911—"What one would like now to see is a race between Wilbur Wright and 'Beaumont'; but to be really interesting it would have to be flown by Wright on the machine with which he performed such wonders when he first electrified the world a few years ago. . . . No one even now has a better control or more graceful daring than that early pioneer." Yes, it would be "interesting," especially in weather like that which blew during the "Circuit." By giving the 35 m.p.h. Wright a month's start, so that it could choose the odd hours when there was no wind, 'Beaumont's' 60 odd-an-hour Blériot might make a race of it, for, of course, the original Wright was quite unmanageable in any wind.

Overheard at the start of the "Circuit":—American girl, as the fourth machine passed over her head, having a bad time with *remous*: "I guess if one of those aeroplane collapsed on my head it would give me the creeps." Somehow, for an American, it seems something of an under-statement.

## The Unwilling Pup.

The girl I was keen on is quite insane,

There is not the slightest doubt;

For 'what in creation had she to gain

By making me fly on an aeroplane?

That's what I want to find out.

She hustled me off to an aerodrome

Where they keep the beastly things;

It was seventy miles at least from home,

And the soil was clayey—a kind of loam—

Well, the sort of stuff that clings!

The instructor rushed me a hundred quid

For teaching me how to fly;

Without knowing what in the world I did,

I found myself minus the left-hand skid

Before I'd started to try!

Well, I broke the machine up bit by bit,

And they repaired it—the same;

The instructor nearly gave me a fit

When he said (not nicely) I'd better "git";

I murmured, "Is that your game?"

One long last effort, and, joys of joys,

We hurtled into the air;

But just as I said, "I'm one of the boys,"

The engine made a most horrible noise,

Between a crack and a tear.

The chap appeared sorry I wasn't dead,

Because I had spilt his bus;

And really the impolite things he said

Made me feel I wanted to punch his head;

He needn't have made a fuss.

I know that the chassis was somewhat bent,

And the fuselage was bust;

That the planes were smashed to a great extent

And the engine looked like a large-sized dent,

And most of the rest was dust.

But I pointed out he had the remains,

And I had nothing, Great Scot!

But a heap of bruises and aches and pains,—

Well, hang it, I've finished with aeroplanes,

And the girl can go to pot.

I never knew such a ghastly sell

At such a high rate of pay;

There's only one little thing to tell,

My roses have done extremely well

On the suit I brought away!

D.M.H.



# Universal Puncture Stop

DOES NOT PERISH THE TYRE.  
DEFIES PUNCTURES.

This could not happen.

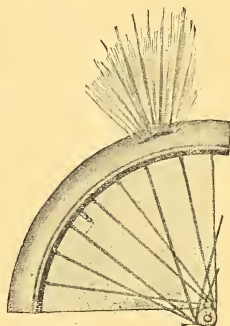


1 Box sufficient for 1 Cycle Tyre.

2 Boxes sufficient for 1 Motor Cycle  
or Aeroplane Tyre.

Full instructions with each box.

PRICE 1/6 PER TIN.



The Universal Aviation Co., Ltd.,  
166, Piccadilly, W.

Telephone:  
3504 Mayfair.

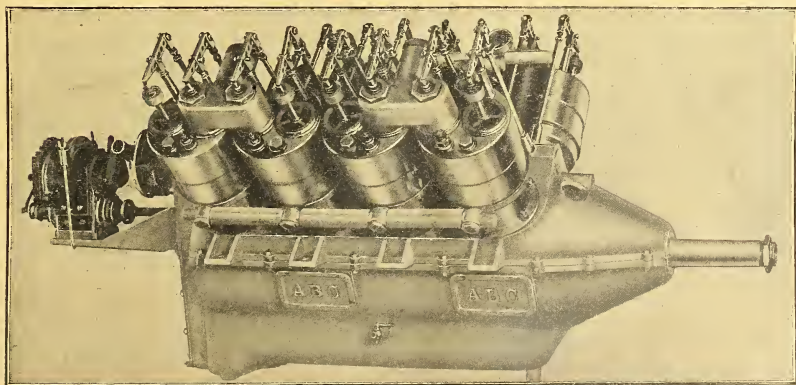
Telegrams:  
"Birdling, London."

## A. B. C. AEROPLANE ENGINES

Manufactured by the All - British (Engine) Co., Ltd.

40-h.p. 4-Cyl. Vertical, £275; 80-h.p. 8-Cyl. "V" Type, £450.

(A 120-h.p. 12-Cyl. "V" Type, £675). Under 3 lbs. per B.H.P.



London Agents: The Universal Aviation Co., Ltd., 166, Piccadilly, W.

## Points of Design.

By P. K. TURNER.

The Perfect Machine is, of course, impossible to obtain, either here or hereafter, for no designer can ever, thank Heaven, say truly that there is no possible further advance. But it may be useful, and possibly even interesting, to give a counsel of perfection in the light of our present knowledge. I am concerned at present only with what may be called "functional" design, as opposed to the design of constructional details.

The main points to which a designer should devote his attention are these:—

1. Stability: (a) Longitudinal.
2. " (b) Lateral.
3. " (c) Directional.
4. Resistance to wind-gusts: (a) Longitudinal
5. " " (b) Lateral.
6. " " (c) Directional.
7. Control: (a) Longitudinal.
8. " (b) Directional.
9. " (c) Lateral.
10. Safety of pilot in the event of a bad landing.
11. Ease of repair or replacement of parts.
12. Efficiency as a power user.
13. Economy as a cash consumer.

The remarks I am about to make on these various points are, I think, fairly up-to-date; but it must be remembered that the discovery of a new principle in aerodynamics—always a latent possibility—may completely stuffy them: they are intended simply as pointers in the present state of our knowledge on the subject.

1. *Longitudinal Stability*.—This matter has been thoroughly well threshed out in another place—in fact, in various other places. It can only be obtained by a "super-lifting" front elevator or an "infra-lifting" tail (the Dunne and Weiss machines are a form of the latter). The "moment" of the tail (area multiplied by distance from main plane) must be above a certain minimum value. This value depends on the result of a horribly complicated formula which nobody uses.

2. There are various attempts to attain *Lateral Stability* by creating perfect travelling air vents, but it cannot be said that any of them have claims to much attention at present. The standard device is the "dihedral angle" (one of the few really good words in the aviation vocabulary). Its great disadvantage is that it leads to a slight loss of efficiency—a point treated at length in a recent article by the present writer.

3. The precise meaning of *Directional Stability* is often misunderstood: If a machine possesses automatic directional stability, it will, if from any cause it is thrown off its course, immediately get on its again. It has been found impossible to achieve this in ships, and I know of no method by which it can be arranged on aeroplanes.

One often hears it stated, chiefly by those who ought to know better, that stability is not necessary, and may be undesirable. This, of course, is reactionary, if not nonsensical. "A bicycle," say they, "has no automatic stability; why should an aeroplane?" As a matter of fact, most bicycles have, within limits, distinct lateral stability (there are limits to all things, as the learner discovers). I wonder how these gentlemen would like a long sea voyage in an unstable boat, which is only kept from capsizing, or diving to the bottom, by the skill of the helmsman?

As a matter of fact, stability is dispensed with in many racing aeroplanes of the present day, because the interaction of the stabilising forces must of necessity absorb power, and the designer of racers wishes every ounce of his power to go towards speed. The result is that only the finest of picked pilots can fly the machines at all, and, even so, accidents are by no means uncommon—quite apart from the question of high speeds as affecting landing.

4. The question of *Resistance to Wind-gusts* lays bare another festering wound (mentally speaking) in many aeromateurs (this remark is purely general). Resistance to wind-gusts is a matter quite distinct from stability—the two may even be antagonistic. A machine has *automatic stability* if, when its attitude is altered from any cause, it returns to its normal attitude. Its *resistance to wind-gusts*, if perfect, means that no wind will move it from its normal attitude.

Another way of putting it is that resistance to wind prevents the machine from pitching or rolling, whereas stability brings it back if it does roll or pitch.

A longitudinal wind-gust, i.e., one in or against the direction of flight, has the effect of causing the machine to pitch.

The greater the time interval between the moments at which the main planes and the tail respectively strike the gust, the greater will be the pitching. The remedies are to keep the main plane and the tail fairly close to one another, increasing the area of the tail proportionately, and to keep the flying speed as high as possible.

5. *Resistance to Side-gusts* is important, for although a dihedral angle will probably prevent the machine turning over, it causes an uncomfortable rolling. This is due to the fact that the upwardly-inclined wing acts, when struck by a side-gust, as a lifting surface.

The remedy is to use a fin below the centre of gravity, so that when the gust strikes the machine the pressure on the fin below balances the lift on the near wing. It must be remembered that a covered-in fuselage will act as a fin, and must be considered in designing.

6. *Directional Resistance* is a matter for very careful consideration. Viewing a machine from the side, it is obvious that in a gust the wind acting on a plane set at a dihedral angle will tend to blow the front of the machine round. At the same time, the wind-pressure on the rudder and fuselage will make the machine try and turn up into the wind.

If these two forces are brought into equilibrium, by moving the fin back or forwards (keeping it meanwhile the same vertical distance below the centre of gravity), gusts will have no effect on the steering of the machine.

As a matter of fact, the general run of opinion, at present, is in favour of an excess of surface at the tail, so that the machine has a tendency to turn up into the wind, as this helps to counteract the effects of the gust.

I am obliged to own, with great grief, that on this question I am in the minority—but the question is still open.

7. *Longitudinal Control* is now almost invariably provided by a tail or elevator, the use of which moves the centre of pressure of the machine. There are still one or two weird machines with apparatus to shift the pilot and engine, and so move the centre of gravity, but as none of them fly I will not go into further detail.

The design of control-planes in general is a matter to which not nearly enough attention is at present paid. Designers are apparently inclined to think that, as the controls are normally inactive, their efficiency is unimportant. As a matter of fact, the controls are almost always in use, and even when in their normal attitudes often do quite a lot of work, owing to careless design.

A control-plane for any purpose is a plane which must run at a variable angle of incidence. It is well known by now that the most efficient camber for a plane depends on its angle of incidence. Therefore, to be efficient, a control-plane must be *flexed*, not pivoted. On the other hand, it is an axiom that all controls should be "balanced," i.e., they should be in equilibrium in any position. This means that the centre of pressure must always be coincident with the point of support. To combine support at the centre of pressure with flexing instead of pivoting is not so easy, but it can be done. The Wrights did it in their original machine, and I myself have, carefully written down on the tablets of my memory, a simpler method still.

8. *Directional Control* is arrived at by a vertical rudder, in the design of which there should be considered the points on which I have just touched re elevators. Another important matter is the size of the rudder: it *must* be powerful enough to keep the machine straight against the full lateral control. I shall refer to this point later.

9. These are four systems of *Lateral Control* in fairly common use: Ailerons, Flaps, Warping, and Balancing Planes.

Ailerons, using the word in its proper sense of "little wings," were used on the early Blériot machines, and are at present fitted to the tail of the single-seater Blériot. They are not easy to fit, are very inefficient, increase the span of the machine, and are not balanced. They may have advantages, but I have not been able to discover them.

Flaps are better than ailerons as regards efficiency, but are not balanced—in fact, in a gusty wind it needs all an average man's strength to work the flaps of a military biplane of the old type.

Warping is still better as regards efficiency—in fact, it is very good indeed. It is also, to a certain extent, balanced; but it suffers from two very serious defects: first, however carefully designed, the construction must perforce be weakened; secondly, in common with ailerons and flaps, it has the fol-



lowing drawback. The use of all these controls offers a resistance to flight on the side on which more lift is obtained and *diminishes* the resistance on the other side—a most pernicious effect; for if the machine tilts to one side, the correct move is obviously to increase the speed of the lower wing, whereas the effect of any of the foregoing controls is to increase its resistance, and, therefore, to tend to *diminish* its speed.

It is on this account that it is so important, in machines with these controls, to have a very powerful rudder, so that, even if the maximum control is put on, the rudder can still keep the machine on its course. This, in turn, necessitates a large reserve of power, for a powerful control and rudder, acting in opposition, offer a very great additional head resistance. The faults of designers on these points have been responsible for various serious accidents; nearly all the cases of sideways slides on a turn are due to this.

Balancing Planes, if they are properly designed, completely avoid these difficulties, but add a new one of their own.

If the attitude of the balancers is correct, i.e., if, when in normal position, they are non-lifting, the use of the control adds resistance equally to both sides of the machine, and *does not in any way affect the steering*. The importance of this point can hardly be over-estimated. Also, it is possible to balance the control planes in themselves by the use of the device referred to above in connection with rudders and elevators.

The difficulty is in arranging the balancers so as to avoid interference losses with respect to the main planes. I do not know whether this can be achieved absolutely, but, at any rate, the losses can, I know, be reduced to something like 5 per cent. of the load on the balancer, an amount which is unimportant when one considers the advantages of this system.

Of controls generally, then, one may say: that balancing planes afford the best lateral control; that all control planes should be flexed and not pivoted; that the controls should be balanced against one another; and that they should be balanced in themselves, i.e., the use of them should not require brute force on the part of the pilot.

10. *The safety of the pilot in the event of a smash* is partly a matter of constructional design, but functional design is also concerned. The pilot and the engine, being the two principal concentrated masses, usually "set to partners" across the centre of pressure. It is obviously better, from the pilot's point of view, that he should fall on the engine in the case of a smash than that the engine should be behind him, hanging over him (figuratively speaking) like a hot and heavy sword of Damocles.

One must, however, remember that the placing of the propeller may be of importance—its best position is still an open question—and that if it is desired to place the propeller in the rear, it is not easy satisfactorily to arrange matters;

for few fuselages at present are strong enough to give adequate bearing support to a light shaft carrying, perhaps, 70 or 80 horse-power. This is a question in which individual ideas play so large a part that it would be useless to give a general dictum on the subject, even if I were myself omniscient.

11. *Ease of Repair* depends on constructional design almost entirely, and I must deal with it in a later article.

12. *Efficiency as a Power User* has already been the subject of a short article by the author, and will, D.V., be treated again later on, for it is a rather large subject. In the space here at my disposal I can only say that, to attain it, first, the useless weight (i.e., weight of machine, engine, and fuel) must be as small as possible compared with the useful weight (pilot and passengers, if any), and, secondly, the useless head resistance of all parts of the machine must be cut down.

Another point is the use of a really efficient propeller. The question of geared-down propellers also must, I am sorry to say, be left open at present. I write "I am sorry to say," for I myself am convinced that they offer immense advantages both as to safety and efficiency; but it seems to me essential, in an article of this kind, to give as "*obiter dicta*" only points upon which the most experienced aero-designers are well agreed.

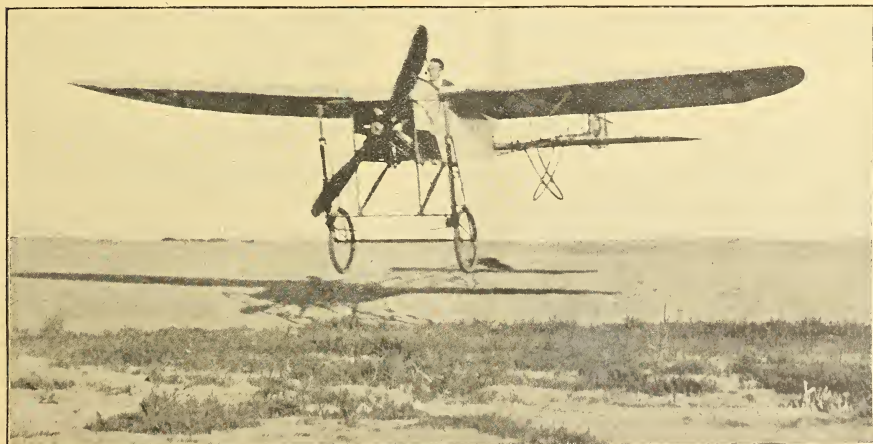
13. *The Question of Economy* is a most important one, for on it hangs the future of aviation as a popular sport and as a commercial industry. But it is difficult to treat, as it is purely comparative; economy for one man may be ruinous extravagance for another. I think the fairest way to treat it is on the double basis of capital cost per ton of useful load lifted plus running expenses per ton-mile travelled. I am already carrying out some investigations on this matter with rather surprising results, in view of the comparative popularity of machines at the present day. I hope later on to give my results in tabular form.

Broadly speaking the matter depends upon (11) *ease of repair* and (12) *efficiency*. To go into it more deeply would take up more than my allowance of these Elysian fields of paper.

In another article I hope to discuss, on the same broad lines as hereinbefore adopted, the question of constructional design.

### The Aerobus Again,

The pilot Molla has recently been experimenting in weight-lifting with the Sommer biplane. One of his latest exploits is to lift eight people and to fly with them for a quarter of an hour, reaching a height of 1,200 feet. The French rule now is that passengers must average 10 stone each, so the feat is really worth noting, being quite a different performance from the infant school outings so popular in the early part of this year, when one or two pilots flew with twelve or thirteen "passengers" averaging about 5 stone apiece.



Sopwith on his 70-h.p. Gnôme-Blériot at Chicago, coming down in the Landing Competition.



## The Week's Work.

## Monday, September 25th.

**BROOKLANDS.**—Deperdussin School out in force. Garne, Chinnery, and Chattaway doing straight flights on the brevôt machine. Porte made first trial of new two-seater, with Bell as passenger. Then Bell out alone, and afterwards with Wilkins as passenger. Machine handles splendidly, and is certainly, bar, perhaps, the Flanders, Vickers, and Newport, the finest passenger monoplane yet seen in this country. When latest type Blériot and new two-seater Bristol appear we should have a fine display of passenger-carrying by monoplane. Capt. Richey, who took brevôt on Bristol biplane on Sunday, joined Deperdussin School to-day to study monoplane flying. Engine-behind Avro out with Noel and Young alternately. Bristol out early, Pizey up with Major Benwell, Fleming doing tests, and Pixton up to keep his hand in pending completion of all-British Bristol. Walton-Edwards' "Colossoplane" made first appearance since the "Circuit" and comported itself in dignified manner.

**HENDON.**—Mrs. Stocks on E.N.V.-Farman doing straight flights. Gates started doing short hops, and Fowler rolling. Hamel started for Windsor at 10 o'clock with two mail bags, but had to descend at Langley owing to inlet valve breaking; returned to Hendon after being delayed till 6 o'clock by weather. At Blériot School, Driver, late biplane flyer, and Parr making straight flights. Corbett-Wilson rolling in good straight lines.

**THE PLAIN.**—Weather very fine in morning, and pupils able to resume solo flying. Capt. Steele Hutchison, Lieuts. Cross, Newall, and Strover, and Lee (the Chinese Government pupil) each flying one circuit with perfect ease, while Lieut. Balder made two circuits in fine style. Pouring rain prevented renewal in evening.

**CARDIFF.**—Exhibitions by B. C. Hucks on Blackburn, despite high wind.

## Tuesday, September 26th.

**BROOKLANDS.**—Fleming out testing air on Bristol. Then Pizey and Pixton each solos. Pizey up with Major Benwell, latter taking lever and showing marked improvement. Afterwards Lawrence, continuing post-brevôt course, out for twenty minutes at 800 ft., flying in splendid style. Deperdussin School at work with Chattaway, Garne, and Chinnery flying straights, and Wilkins and Capt. Richey rolling, all on brevôt machine, *vice taxi* still in hospital. Capt. Richey waltzing in approved style. Biplane pilot's first attempts on monoplane always entertaining. Setti on engine-in-front Avro for first time, rolled determinedly into sewage farm and broke propeller.

**HENDON.**—Mrs. Stocks making rapid progress and flying circuits. Fowler and Gates still in straight flight stage. Valkyrie School closed for the week. Chanter School suspending operations pending settlement of argument with proprietors of aerodrome. At Blériot School Driver and Parr practising straight flights and improving. Sacchi, Prencsele, and Tremlett learning to handle machine on ground; later, Lieut. Low joined other pupils.

**THE PLAIN.**—Another fine morning. Flying commenced by Busted, who took Jullerot as passenger to point on Plain, from which he observed speed tests of the monoplane, which occupied some time, followed by solo flying by pupils. Capt. Steele Hutchison made two circuits, as did Smith-Barry; Lieuts. Strover and Balder each making one circuit. Lieut. Hooper, who recently joined, made first solo successfully, and Lee and Lieut. Newall each made neat figure eights.

**CARDIFF.**—Blackburn monoplane, with Hucks on board, giving exhibition flights. Wind very bad, but crowd insistent, so Hucks took his chance, and succeeded in doing well. Fine testimony to pilot and machine.

## Wednesday, September 27th.

**BROOKLANDS.**—"Colossoplane" out morning and evening, and made several short flights, more impressive by reason of terrific noise of its 100 h.p. Clergét. Pizey out on Bristol with Major Benwell; latter in pilot's seat handling machine with little assistance and making good landings without help. Day of sorrow for Deperdussin School. Santoni on brevôt machine making nice circuit; was carried by side wind across sewage farm on to track, and would have completed turn neatly but for telegraph post rudely obtruding its presence on right wing. No damage to pilot, fortunately, but machine in bad way, though fuselage and chassis stood up well considering nature of smash.

**HENDON.**—All Blériot pupils out practising.

**THE PLAIN.**—Capt. Steele Hutchison passed tests for certificate, showing perfect mastery of machine. Evening too stormy for flying.

**CARDIFF.**—Exhibitions by Hucks on Blackburn still continued, despite bad weather.

## Thursday, September 28th.

**BROOKLANDS.**—Deperdussin two-seater, last remaining mount for time being, out with Porte at wheel and Bell as passenger. Then Bell up with Chinnery as passenger, and, later, with Woodman, the plucky youngster who lost a leg in motor-bicycle smash when training for Tourist Trophy race in Isle of Man last year. He still races on motor-bicycles, and thoroughly enjoyed flying, so evidently has heaps of nerve in spite of smash. Bristols busy. Pixton out testing, but something wrong with Gnome and machine flying badly. Later put right, and then Fleming up with Major Benwell, latter in pilot's seat in full charge. Afterwards Pizey up with Capt. Harrison, a new pupil. Avro School in full flight. Sippe doing circuits, and Young and Setti rolling, on engine-in-front machine, Young flying the old engine-behind affair. Later, Raynham and Sippe each doing circuits on Avro. Then Noel out on old machine doing exhibitions for the High Priest of some new and original religious sect. Frank Ballard, Spencer's first pupil, doing straight flights for first time.

**HENDON.**—Very calm weather. Driver making very rapid progress and beginning to fly nicely. Other Blériot pupils, Tremlett, Parr, Welburn, and Lieut. Low out practising straight runs and short flights. In evening same pupils again out, with addition of Gordon Jones.

**THE PLAIN.**—After trial of weather conditions by Busted, Jullerot tested No. 43, which had been rebuilt at Filton from ruins of Pizey's smash at Ventnor. Found it in perfect order. Lieut. Newall, of Indian Army, passed brevôt tests, flying remarkably well for three-quarters of an hour. Lieut. Strover flew one circuit on No. 12, but breeze, steadily freshening all morning, suddenly developed into something approaching cyclone, and abruptly terminated work. In evening Busted and Jullerot both up to test conditions at 1,000 ft., and each finishing with beautiful spiral right-hand and left-hand. Lieut. Cross and Smith-Barry and Lee each did solos for ten minutes, and Lieut. Strover followed, flying eight minutes.

**NEWPORT, MON.**—Unexpected arrival, at 6.30 a.m., of Hucks on Blackburn from Cardiff, having flown over in 21 minutes. Raced his manager, Manton Day, who came by car. Motor won, owing to Hucks climbing to 1,500 feet and following Channel instead of road. Hucks, later on, received in state by Mayor of Newport. During day Hucks made two good exhibitions, one of five minutes and one of quarter-hour, wind very bad. Much-travelled Blackburn flying splendidly, and evidently equal to anything turned out abroad for solidarity and working capabilities.



Mr. H. Petre (known as Peter the Monk) quits the Harriot.

**Friday, September 29th.**

**BROOKLANDS.**—Pizey on Bristol out early with Major Benwell at helm, still improving. Later Benwell rolling solos. Pixton, testing E.N.V.-Bristol, up over 400 ft., and well pleased with machine and engine. In evening Fleming out with Benwell as passenger. Sippe out in evening on Avro doing circuits. Ballard out on Spencer biplane again doing straight flights in good form.

**HENDON.**—All Blériot pupils practising in turn, Parr showing great improvement.

**THE PLAIN.**—After usual trial, Jullerot up with Lieut. Newall, who took a number of photographs of surrounding country. Lieuts. Cross and Stover made two long flights, followed by Smith-Barry and Lee. All these pupils developing into exceptionally fine flyers, and should be ready to pass brevets as soon as opportunity offers.

**HUNTINGDON.**—W. B. R. Moorhouse on Gnome-Blériot, same on which Radley flew Channel, made first trip on big-powered machine. Got off in 20 ft. and flew four circuits in excellent style. Average height, 200 ft., and maximum, by aneroid, 300 ft. Perfect landing. Moorhouse has makings of first-class flyer, and has plenty of theoretical experience to back him.

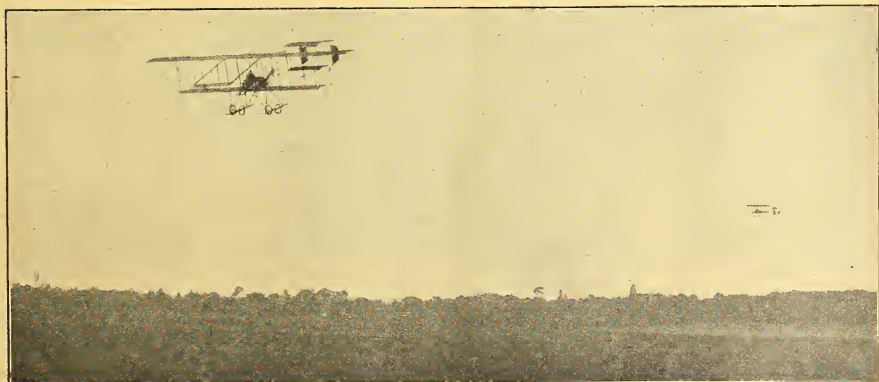
**Saturday, September 30th.**

**BROOKLANDS.**—No flying. Hurricane all day. Everyone busy on machines in sheds. Bristols tuning up E.N.V. for Manville Prize on Wednesday. Same engine which refused to pull last Manville day. Since overhauled, and trouble found in oil pump and carburettor. Machine is the old one condemned two months ago, but now re-covered, rewired, and rebuilt, and better than new. Flanders shed completed overhaul of monoplane. Dihedral reduced; Beney propeller in place; new and larger radiator fitted; new steel tanks; everything in splendid order, but for mysterious ignition trouble which pulls engine up after running a few seconds. Finally traced to magneto. Opinions of this machine universally favourable, and acknowledged to be equal to best French products. Universal Aviation Company at work on new "Birdling" racer, which promises to be very fast, and is to have entirely new type of chassis. Brothers Pashley still suffering from engine trouble, and had to send motor back to works again, but no truth in Brooklands rumour that they have bought season ticket between London and Coventry for use of engine. Deperdussin men all at work on repairs to taxi and brevet machine, and both should be out during week. Martin and Handasyde nearing completion of new monoplane, longer in fuselage than last, to give bigger rudder and elevator control, and all of 200 lbs. lighter. Blondeau-Hewlett finishing overhaul of biplane. Mrs. Hewlett wishes it to be known that Blondeau biplane is officially a British-built Farman being built under licence. Mrs. Hewlett says she finds Mr. Snowden-Smith's little racing machine much easier to handle than old original machine, in spite of considerably greater speed. Maurice Ducrocq, suffering from bad cold, at work truing up racing biplane. At present has got new Viale engine in shed, destined for Avro biplane, a very fine specimen of air-cooled radial engine, and has



Lieut. A. Wyness-Stuart, R.A., one of the recent pilots to pass his brevet on a Bristol.

recently been doing excellent work in France on Daucourt's Blériot. Avro pupils, having now entered into possession of the school machine which Raynham intended to fly for Michelin Prize, interest centres in new speed machine, smaller, but built for 60-80 h.p. Green instead of 35 h.p. Machine itself a good piece of work, but by some strange mistake fabric treated, before arrival, with varnish which has chemical error in its constitution, with result that humidity of air has slackened off fabric till it hangs in bags, and machine could not possibly fly. Whole machine has to be re-covered, much to annoyance of Mr. Roe and his hard-working school. Hanriot School now consists of Bertie Rippen only. Mr. George England, finding himself unable to give school requisite personal attention, has decided to close down. H. Petre (Peter the Monk) consequently at liberty to pilot any machine, and Rippen merely handling machine till he gets brevet. Afterwards may or may not take over machine on own account.



Pizey and Major Benwell on the School Bristol "en vol plané." In the distance is Snowden-Smith.



To be hoped that familiar figure of the graceful Henrietta will not depart from Brooklands, but she has always been unlucky from the day she fell into river with Cordonnier on her very first appearance, and never once has she been able to appear in competition for aggregate prizes, and hardly ever at week-ends, always being smashed up just before by clumsy pupils or suffering from engine trouble, though covering hundreds of miles between times. Jack Humphrey showing no signs of activity for some time, but it is said he has acquired Skinner monoplane, very neat piece of work turned out by Mulliners at Clapham Junction, and still intends to learn to fly, despite discouraging experiences with own and other machines. Antoinette shed still locked up and nothing doing, apparently pending development of new scheme in France. Machine sent over after Radley's smash still lying in unopened case. Vickers sheds all swept and garnished ready for reception of new Vickers-Reps. First of these expected during week, as Fisher has been testing it thoroughly at Dartford during past week.

HENDON.—Closed for day on account of wind and rain.

#### Sunday, October 1st.

BROOKLANDS.—Gale continuing, so nothing done.

CHELTONHAM.—B. C. Hucks arrived to give exhibitions. H. Higgins (THE AEROPLANE correspondent) writes no machine arrived till Monday night, though handed to railway Saturday evening. Hucks says in future he won't trust to railway companies when it is possible to fly from point to point. "Too much glorious uncertainty about getting it delivered at other end," said he.

#### Barrhead Aerodrome.

The General Officer Commanding-in-Chief Forces in Scotland has appointed Captain Forsyth, R.F.A., and Lieut. Warrand, Black Watch, to undergo a course of flying at the schools of the Scottish Aviation Company at Barrhead.

The four other pupils, Messrs. Clinkskill, Thompson, Burke, and Govan, are all doing well, and two are expected to qualify for their brevet at an early date.

The equipment now consists of Blériot monoplanes, Farman type biplane, and a new military type passenger Avro-cum-Breguet biplane, and two other machines now building.

Mr. R. W. Philpott has been engaged as chief pilot instructor. It will be remembered that Mr. Philpott was one of the first Bristol pilots to get his certificate under the new rules.

#### The Aeroplane Section, R.E.

On Friday, 22nd inst., the Aeroplane Section were rather busy, as an unexpected visit was made by His Majesty's airship *Gamma* from Farnborough. She was sighted in the direction of Beacon Hill, making slow headway towards the Plain Aerodrome. Orders were at once given for every available man of the section to give a hand to land her when she arrived.

On nearing The Plain, it could be seen that she was flying the Union Jack. A little later a red flag was also flying, which is a warning to troops near at hand to give assistance if required. As the "Air Company" were the only troops under canvas on The Plain, they had to be content with their little band of about fifteen men to land her, which was accomplished in brilliant style, considering they have been away from these gas-bags for so long.

She landed very nicely, as gentle as a bird, and without a "bump." Natives from the surrounding district were soon on the scene, and assisted to tow her. She was towed to a sheltered spot called Dawn Barn, where she was anchored down. She was followed by road by two motor-cars, which did not arrive till about a quarter of an hour after she had landed.

The course from Farnborough to The Plain was taken by the railway, and the time taken was 1½ hours against a head wind. She landed about 12.45 p.m.

Her crew consisted of Mr. O'Gorman (Superintendent Army Aircraft Factory), Captain Brock-Smith, R.E. (Instructor), Captain Maitland, Q.M.S. Fewster, R.E., Sergt. Lanman, R.E., and Civilian Mechanist Moseley. Sergt. Lanman was in charge of the steering the whole of the voyage. Mechanist Moseley in charge of the motors, and Mechanist Q.M.S. Fewster, R.E., had a little wheel to play with, turning it backwards and forwards, as the case may be, to alter the position of the propellers, a thing anyone could manage. Why he should be given this job and a civilian the responsible job of driving the motors is still unsolved. In nearly every ascent a civilian has this job, while there are military machinists who could do the same thing. Can anyone explain why this is so? One would expect the experience to be more necessary to a soldier, the civilian being absent in active service.

On close inspection it was seen that a couple of bracing wires had snapped. These, however, were soon mended by one of "the section." Next thing was to bag her down. Sandbags were filled and placed in the car, then the crew alighted, and proceeded away to obtain lunch. During their absence it was necessary for an officer to be present, this duty falling to Lieut. Connor, R.F.A., assisted by the willing Aeroplane Section, preparing the ship for her return voyage. A supply of hydrogen gas was obtained from the sheds which had been stored up for a long time, only using it to fill pilot balloons. The gas was taken down to the spot where she was anchored by the "Paraffin Oil Can" (this being the nickname for a paraffin lorry which is the "Section's" chief means of transport. It is very often laid up for repairs).

The party detailed for loading up the "fountain pens" (otherwise the gas tubes, weight about 2½ cwt. each) remarked that it was like old times, and that they did not want a visit of this kind very often, as they preferred the aeroplane, with three men to manage it.

Before the arrival of the gas the ballonette was emptied



The Army airship "Gamma" on Salisbury Plain. Note the graceful curve in the back



of air, ready for replenishing with gas. Three tubes were turned into her, which seemed sufficient after such a short voyage. A little alteration was made in the crew for the return journey, but the number remained the same. The new crew were: Captains Broke-Smith and Maitland, Lieut. Waterlow, R.E., Q.M.S. Fewster, R.E., Sergt. Squires, R.E., and Civilian Mechanist Moseley. She left about 2.30 p.m., with a wind behind her.

No flying has taken place on The Plain by the Air Battalion officers since Tuesday, 19th, as Lieut. Barrington-Kennett has proceeded on leave for a few weeks prior to his going to France to take over the Nieuport monoplane. Lieut. Reynolds has also been away. The rank and file of the "Section" were busy collecting stores, etc., prior to their move on Monday, 27th, when they proceeded to Farnborough for about a month or six weeks, afterwards to return to The Plain again.

Captain Burke has made some good flights at Farnborough on his rebuilt Farman, which he has mastered so well. He will soon rank as one of England's best flying men.

In Cove Common, outside the Army Aircraft Factory, the Air Battalion have had three portable aeroplane sheds erected, which each house one aeroplane. These are very convenient, and can be erected with very few men in a short time. Another of these sheds is about to be erected on Laffan's Plain.

The new Army airship *Delta* has, after all this time, been inflated with air, which means that she is getting somewhere near completion.

On Friday, 29th inst., officers, N.C.O.'s and men of No. 1 Company, Air Battalion, R.E., had an early rise. His Majesty's airship *Gamma* (Yellow Peril) was taken out for a trip in the vicinity of Aldershot camp. She had a crew of six, Corporal McGraw, R.E., steering. Passing over Blenheim Barracks at a good ft. she met a strong head wind, which tossed her about 300 feet, and she was almost stationary for about five minutes. Soon the red flag was waved as warning that she was about to descend. After tacking broadside on, she eventually landed on Cove Plateau, where she was received by No. 1 Company, Air Battalion R.E., and towed safely into her shed, none the worse for her little trip. The crew gained a little experience in managing her in a wind, which is rarely attempted.

On Monday last an experiment was tried with her ripping panel, which resulted in experience being gained as to behaviour of steel tube frames under sudden and irregular pressure. Repairs will take some time and cost more money.

#### The Month's Work at the Bristol Schools.

From August 26th till September 30th the following pupils have passed the tests for their aviator's certificates:—

Name	School	Date of joining	Date of occurrence	Time passing	Wk. days
Lieut. Clarke Hall (R.N.)	Salisbury...	Aug. 19	Aug. 26	1	0
Mr. S. P. Cockerell ...	"	Aug. 14	Sep. 1	2	4
Mr. E. Harrison (Victoria, Australia) ...	"	Aug. 4	Sep. 1	4	0
Mr. W. E. Gibson ...	"	Aug. 7	Sep. 1	3	4
Naval Cadet R. F. Wheeler ...	"	Aug. 8	Sep. 9	4	4
*Mr. J. Breerton ...	Brooklands	May 14	Sep. 12	4	0
†Lieut. Wyness Stuart (R.F.A.) ...	Salisbury...	July 4	Sep. 25	5	2
Capt. F. W. Richey (Indian Army) ...	Brooklands	Sep. 4	Sep. 25	3	0
Capt. Steele Hutcheson (Indian Army) ...	Salisbury...	Sep. 1	Sep. 27	3	5
‡Lieut. C. L. N. Newall (Indian Army) ...	"	Aug. 21	Sep. 28	3	3

\* This gentleman was away from the school for about three months during the period mentioned.

† This officer was away from the school for about three weeks during the dates mentioned.

‡ This officer's tuition was interrupted for about two weeks. Total certificates for the month, 10. Average time occupied, 3 weeks 3 days.

It should be borne in mind that in many cases the pupils might have passed their tests sooner, but were purposely held back from doing so until they had had ample opportunities for practice.

Present pupils are—Messrs. O. S. Mellersh, H. H. Slater, E. Pitman, L. E. Petavel, R. Smith Barry, Lieut. Balder, R.N., Lieut. Joseph, R.N., Lieut. R. J. Watts, Lieut. E. J. Strover, Mr. Z. Y. Lee (Chinese Government pilot), Lieut. E. G. K. Cross, Lieut. A. F. A. Hooper, Major R. L. Benwell.

It will be seen that of the ten pupils who passed their tests during the month six were officers of the Services, and that of the thirteen still remaining under instruction no fewer than seven are officers of either the Navy or the Army.

It is very gratifying to find so many Service officers taking such a keen interest in aviation as to take tuition at their own expense, and the Bristol Company has every reason to congratulate itself upon the success which has attended its progressive policy in tuition methods.

The number of certificates granted to aviators by the Royal Aero Club of England is at present between 140 and 150, and the efficiency to which methods of tuition in flying have been brought is evidenced by the last two months' record of the Bristol flying schools, where nineteen pupils have passed their tests for certificates during that period. It is interesting to note that of these nineteen pupils fourteen were officers of either the Navy or the Army, one of them being the only British Brigadier-General to qualify as an aviator, and another a naval cadet who enjoys the distinction of being the youngest person to pass the tests of the Royal Aero Club.

The Bristol Schools are staffed for the most part by British instructors, and are entirely equipped with British-built aeroplanes, so that aviation may justly be said to have formed the subject of a now firmly established and flourishing industry in this country.

#### The British Aviators in America.

Mr. J. D. Sturrock, the manager of Mr. T. O. M. Sopwith's highly successful tour in America, writes as follows:—  
"We have been so busy at Chicago and Boston that there has been little time for writing.

"About the Curtiss hydro-aeroplane—I have written for full details, and expect to be able to let you have them by next mail. We saw one of these machines operating on Lake Michigan during the Chicago meet, and it certainly does all that is claimed for it. As a matter of fact, we are getting out drawings for some floats on our American Wright, and expect to try it out in a few weeks' time. I will let you know how we get on with it.

"Now perhaps a few details of the Chicago and Boston meets from one of the spot may interest you. With regard



An American Portrait of Mr. T. O. M. Sopwith.

to the former meet, it was undoubtedly a wonderful success, and from many points of view I suppose it was the greatest aviation meet ever held. The situation was unique, the actual aerodrome being practically in the heart of a great city; it was bordered on one side by Lake Michigan and on the other by 'sky-scrapers,' and the actual course round the pylons was 1½ miles.

"We were greatly surprised at the way the organisation worked out. To be quite candid, we expected it to be a failure, as they had attempted things on a very large scale, and they had no experience with meetings at all. However, everybody worked like niggers, and the result was, as I said, an unqualified success from every point of view but a financial

one. It was not, however, a money-making scheme, but a sporting effort on the part of Harold McCormick, who guaranteed upwards of \$250,000 towards it.

"The most striking thing about the meet was the large number of machines in the air practically all the time. I think the greatest number at one time was seventeen. This was secured by offering a large prize—about \$12,000—for total duration during the meet, so that numbers of men were flying for duration only, and consequently there were always some men flying.

"With regard to the attendance, this was a wonderful sight. It was estimated that from 200,000 to 300,000 people saw the flying every day—although only about 25,000 paid for admission daily.

#### The Death of Captain Engelhardt.

Aviation has lost one of its greatest pioneers through the death of Captain Engelhardt, who was killed at Johannisthal on September 20th. That Captain Engelhardt, after surviving all the risks of flying the original type of Wright machine, should have been killed on one of the modern and comparatively safe machines of to-day is certainly the irony of fate.

He was flying this machine with a passenger, Herr Sedlmayr, a youth of 19, in a fairly strong breeze. Finding the gusts too strong close to the ground he took the machine up to a height of about 60 feet, when after they had been in the air for an hour and five minutes one of the propellers either burst or became detached, and the machine swung round sideways and dived.

Captain Engelhardt was picked up dead, and Sedlmayr was thought to be so severely injured that his state was at first considered hopeless. Later news says that Captain Engelhardt jumped clear as the machine struck the ground, this being his custom whenever involved in an accident. In this case, he is said to have misjudged his distance, and to have been struck by the engine. Sedlmayr is now reported as being little hurt.

The accident should, however, teach us a lesson. The modern Wright machine, though it has not got an engine behind, is dangerous for much the same reason as the older type of French biplane, in that the pilot and passenger are seated in the very front of the machine, in such a position that when the machine hits the ground they are either thrown out violently or are crushed by having the main weight of the machine behind them.

There are, undoubtedly, constructional difficulties in the way of placing the engine in front and the pilot behind, because of the twin propellers used in the Wright. But this difficulty can be disposed of automatically if the propellers are made into tractors, and are placed in front, on a level with the engine, as in the new Short machine and in the original Jezzi biplane.

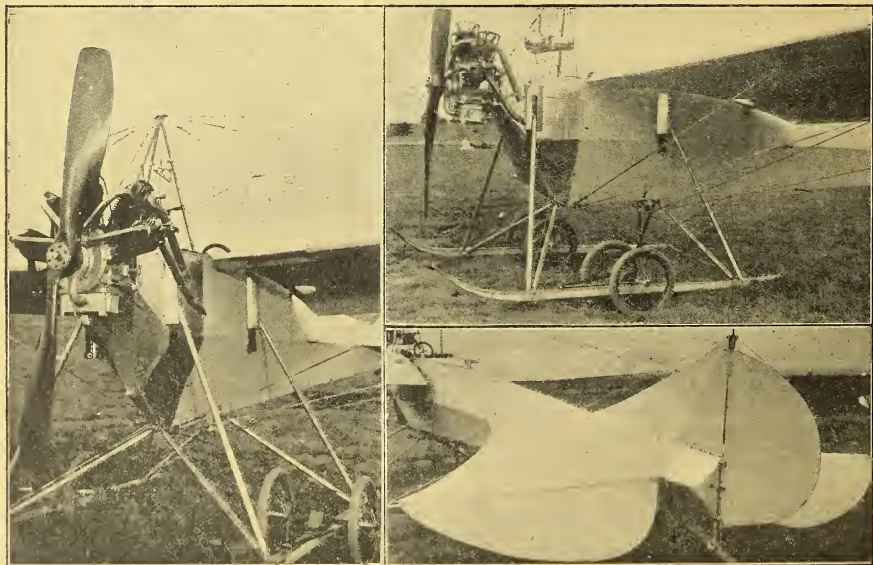
Another lesson which this accident teaches is the danger of running twin screws with independent drives. It will be recollected that the first man killed in a power-driven aeroplane, Lieut. Selfridge, met his death through a similar cause on a Wright machine of the earliest type. If one chain or one propeller should break, naturally the whole power of the engine is thrown into the other propeller and the machine swings round violently to one side, tilts up on that side, and ultimately does a spiral dive.

Now numbers of accidents in which the pilots have been unhurt, such as those of Lieut. Porte, R.N., and Mr. Ronald Kemp, at Brooklands, on the day of the "Circuit of Britain," have proved that, provided the pilot is seated behind the main mass of the machine, he has a chance of escaping unhurt.

Yet another danger, common to nearly all propeller-driven machines, is, of course, that the propeller, in bursting, may cut the tail clean off the machine, or, at any rate, damage it, as certainly happened in the case of Mr. Rolls at Bournemouth, and, therefore, there are strong arguments against any form of drive except tractor screws, except when the propeller can be placed behind everything, as in the Voisin-Canard.

Even when twin tractors are used there still remains the necessity for driving both screws by means of one chain, so that in the event of a chain breaking both propellers will stop, and there is the still more difficult problem of arranging the mechanism so that if one screw should burst the other one will stop. This can only be achieved by means of some form of differential gear. If only our constructors will learn these lessons, which are impressed upon them only too often by the loss of valuable lives, then these lives will not necessarily have been wasted.

Captain Engelhardt was one of the three first German pilots. Before devoting himself to aviation, he was aide-de-camp to the eldest son of the Kaiser. He was the first German who ever mounted an aeroplane. When Orville Wright first visited Berlin, Engelhardt, inspired with enthusiasm for aviation, resigned his commission in the Navy and devoted himself to



Details of "Vickers II."—Note the aluminium box on the tail to reduce head resistance of levers. Also the aluminium casing to front of fuselage, and the combined radius rods and struts from fuselage to skids.



flying, and his pilot's certificate dates to March 15th, 1910. He competed successfully in most of the big German trials, and would have had considerable influence on German aviation in the future had he lived.

In his death he was merely another victim of the slowness of aeroplane designers to appreciate what ought to be obvious defects in their own designs.

### Clement Gresswell makes a Change

His many friends among those who take an active part in aviation will be interested to hear that Mr. Clement Gresswell, who is certainly one of the prettiest monoplane flyers in this country, has left the employ of the Grahame-White Aviation Company and is at present taking a well-earned rest. He has not yet made arrangements to fly any particular machine in the future, but it is hardly likely that so capable an instructor and so good a flyer will be content to remain permanently on the ground.

### An Excellent Addition.

Those who wish well for the permanent success of the Hendon Aerodrome—and among them the present writer certainly claims a place in spite of certain criticisms which he has felt it his duty to make from time to time in the best interests of aviation—will be glad to hear that Mr. Leonard Williamson, the well-known Southport motorist and engineer, is now taking an active part in the management of the flying ground. Mr. Williamson has been for some time busily engaged in fitting up one of the Grahame-White sheds with a thoroughly adequate outfit of machine tools, which should make it possible to handle both engine and aeroplane repairs in a very thorough manner. Personally Mr. Williamson is just the man to make a success of the business if given a free hand. He is a firm believer in the possibilities of aviation. He realises that to be a permanent success aviation concerns must be run in a businesslike way, and his manner is such as to give anyone with whom he comes in contact confidence that whatever he says can be relied upon, and that whatever he does will be done honestly and thoroughly. THE AEROPLANE wishes Mr. Williamson every success in his new venture, and sincerely hopes that he will be able to bring to Hendon that intangible something which it has hitherto lacked and has unfortunately caused it to be regarded more as a place where people go who want to see the newspaper favourites perform than as a place where serious work is done for the progress of aviation.

### The Lift of Planes.

In the correspondence columns of THE AEROPLANE for last week there appeared a letter from a correspondent who wished to know whether the formula usually employed in such calculations was the "Eiffel Tower" formula.

As a matter of fact, every designer has his own formula for getting plane lift, according to whether he prefers to work from angle of incidence, angle of trail, or angle of deflection. All the formulae have a general family resemblance, the main difference being in the constant employed. It is this constant, sometimes known as "the Elusive K," which offers the principal difficulty in plane design. The derivation of the formula is very simple to anyone who has a slight knowledge of elementary mathematics.

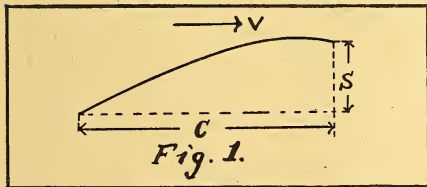


Fig. 1 shows a plane, which we will suppose to be moving to the right at  $V$  feet per second. Let its "chord" be  $C$  feet, its area  $A$  square feet, and the vertical distance  $S$  feet.

Now this plane gets its lift by accelerating the air downwards, and the lift is expressed by the formula  $L = \frac{wa}{g}$  where  $L$  is the lift in lbs.,  $a$  the acceleration,  $w$  the weight of air acted on, and  $g$  the force of gravity. This is one of the first formulae of simple mechanics.

In the particular case under discussion we have to find  $w$  and  $a$ .

Now the amount of air acted on is obviously equal to the area of the plane, multiplied by the thickness of the stratum of air affected. It is known that this thickness depends on the chord of the planes, so that, if thickness =  $mC$ ,  
cu. ft. of air =  $mAC$ ,  
or if wt. of 1 cu. ft. of air =  $r$

$$w = rmAC.$$

Now, the plane moves  $V$  ft. in 1 sec., and it is in contact with any particle of air while it moves  $C$  ft., therefore the time of action on any particle of air is  $\frac{C}{V}$  sec. The downward acceleration of the air is such that, starting from rest, it has moved  $S$  ft. in  $\frac{C}{V}$  secs

Now from mechanics,

$$\text{distance} = \frac{1}{2} \text{ acceleration} \times \text{square of time,}$$

$$\text{or } S = \frac{1}{2} a \left( \frac{C}{V} \right)^2$$

$$\text{or } a = 2 \frac{S}{C^2} V^2$$

therefore lift (which =  $wa$ )

$$= \frac{rmAC}{2rm} \times \frac{2SV^2}{C^2} \\ = \frac{r}{m} A \frac{S}{C} V^2$$

Now  $S/C$  is the "angle of incidence," otherwise known as  $\rho$ ;

$$\text{Therefore } L = \frac{2rm}{g} A \rho V^2$$

If two planes of equal area, running at the same speed and angle, lift different weights, this is due to a difference in the "coefficient"  $\frac{2rm}{g}$ . It is this "coefficient" which is constant for any particular plane, which is known as "K." So that the formula eventually takes the form  $L = KA \rho V^2$ . As will be seen,  $K$  depends upon (1)  $r$ , the density of the air, usually taken as .08 lbs. per cu. ft.; (2)  $g$ , the force of gravity, usually taken as 32 (approximate); and (3)  $m$ , the thickness of air deflected. Since  $r$  and  $g$  are practically constant, it is obvious that the efficiency of the plane depends chiefly on the thickness of the stratum of air deflected. The greater this thickness of air, the more will the plane lift at the same angle and speed.

It is here that practice must come to the aid of theory. I arrived at the formula I myself use by the simple method of taking full particulars of every machine I could, and averaging them up. When designing planes I use this average value and then take great care to use a plane camber which has a higher efficiency than that of the average machine, thus obtaining that "little bit in hand" which so often makes all the difference between the success or failure of a machine.

It must be remembered, of course, that "K" is dependent upon the units in which the other quantities are expressed. In the particular case of the Flanders machine, referred to by Mr. Burrell, I gave "K" the value of .008 from the following application of the formula above mentioned:—

$$L = KA \rho V^2$$

$$\text{or } K = \frac{L}{A \rho V^2}$$

In the Flanders,  $L = 1,150$  lbs.,  $\rho = \text{one-fifth}$ ,  $A = 200$  sq. ft.,  $V = 60$  m.p.h.

$$\text{so that } K = \frac{1,150 \times 5}{200 \times 60 \times 60} = \frac{1,150}{40 \times 60 \times 60} = .00798$$

So that, as I said in my original article, "K" does equal .008 at 60 m.p.h. and an angle of incidence of 1 in 5. Of course, if the area had been in square yards or square inches, the weight in tons or ounces, and the velocity in feet per second, or other units than miles per hour, "K" would have had a different value; but I arrive at this value seeing that square feet of area and miles per hour of velocity are the usual units employed for full-size work. For model work, when area is in square inches and weight in ounces instead of lbs., I have found it best to use a value of  $K$  of somewhere between .002 and .001.

Considering the change in units, this is about twice as efficient as most full-size machines, the cause being the comparative absence of head-resistance.

P. K. T.



## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

### Sappers and Aeroplanes.

Sir,—The writer of the paragraph of September 21st was under no misapprehension as regards "No. 1 Section, R.E." He was not anxious to "eat his cake before it is baked," but to save the Army aeroplane business from being "boiled" by association with a corps which is clogged by tradition and notoriously impractical.

Says "Wexford": "The French Air Corps is still part of the Sappers." It is not.

On March 31st, 1910, a heated debate took place in the French Senate in which the Army was bitterly called to account for their lack of interest in aviation. At that debate it was resolved to insist that "the autonomy and progress of aerial navigation should be immediately secured."

Mark that,—autonomy.

Up till then—that is to say over the period which the Chamber held up as marked by a complete neglect of aviation—the French aeroplanes had been controlled by sappers.

This debate had far-reaching effects.

In April (less than one month after the debate, so urgent was the matter held to be, a *separate corps* was formed to deal with aeroplanes, and placed under the entirely independent command of a separate chief. This corps, and all that composed it, was on that date removed completely from all association with the French sappers.

That took place eighteen months ago. Let "Wexford" be the judge as to the effect it has had on French aeronautics!

Towards the end of the same month, the Central Organisation of Military Aviation, together with all its stores, was removed from the charge of the Director of Stores of the Génie (sappers) and placed under, the control of a "Director of Aeronautical Material," who is *not* a sapper, as "Wexford" can very quickly find out by a two-minute reference to a French army list.

The whole outfit then existing of aeroplanes was before the end of the month handed over to the new organisation, thus finally and completely severing the disastrous connection of aeroplanes with the French Génie.

In October last the authorities instituted an "Inspector of Aviation." It is true that the appointment was given to General Roques, himself an Engineer; but anybody who cares to examine that able general's record will easily recognise that he received the appointment because he was the man to fill it, and *not* because he was an Engineer, as poor "Wexford" fondly imagines.

A word of advice to "Wexford," who I suspect is not so remote from Air Battalion headquarters as his "nom-de-plume" indicates: Let him be certain of his facts before he uses them as premises upon which to base his arguments.

As regards his opinion that the officer-pilots will be replaced by mechanic-pilots, it is difficult to see upon what grounds he bases this remarkable notion, unless a pious wish is the father of the noble thought. It is true that it is more comfortable (and far safer) to direct the aerial movements of the mechanic-pilot by wireless, possibly, from the comforting platform provided by Mother Earth. Can that be the rôle he foresees for Air Battalion officers? But that is not the way in which I have always thought that "Wexford" lads looked at danger.

Rivoli.

### British Industries.

Sir,—I am sorry to see that Mr. Clift has misconstrued the meaning of my letters *re* "Engines." When I took up this discussion I did so because, as a man who likes to see fair play and justice where justice is due, I objected to having the Gnome engine detracted and disparaged when the whole aeronautical movement has been so benefited and advanced by its aid.

There were other engines on the market before the advent of the Gnome, including several English ones, so that one cannot offer the excuse that the Gnome was first in the field. Now can anyone say that there were any inside influences at work which enabled the engine to so quickly make its way to the forefront?

Furthermore, as I have previously said, the mere fact that

the engine was a rotary one, and that previous tests had apparently shown that this type of motor was anything but a success when put to practical test, was sufficient to cause grave doubts among the older and more serious of engineers and ridicule and contempt among the younger ones as to its capability of performing any kind of work at all, and as to its ousting the then "best engines" and itself becoming the premier aviation motor, such a possibility was not even dreamt of.

M. Laurent Séguin certainly did a wise thing when he lent Paulhan one of the first of his engines, for Paulhan certainly did more than anyone to bring the Gnome into prominence, and to the direct notice of Farman, Blériot, and the several others who began to manufacture aeroplanes in fair numbers soon after that time.

Until recently it had seemed to be the general idea among English engine makers that they had only got to design and build an aviation motor, advertise it extensively, and they would find a public ready and eager to take on the responsibility of doing the entire work of tuning up, although paying for what they were led to believe was a thoroughly reliable engine.

It is a well-known fact that a number of our best pilots (besides a good many poorer experimenters who purchased English engines because they could not afford the more expensive Gnomes) have spent many months of tiring and useless labour endeavouring to be patriotic and make their machines fly with English engines, the while having the humiliation of seeing other aviators flying Gnome-driven aeroplanes constantly making flights of long distance and duration, making and breaking records, and daily doing more to advance aviation in the public eye than they have done with all the time and trouble to which they have voluntarily put themselves simply that they may support an "English industry." A few of the engines I have in mind are now beginning to give some account of themselves, and about time, too.

Even Nieuport, a man who built some remarkably fine motors (including the famous 28 h.p. model which performed so well in conjunction with the small Nieuport monoplane) had to give priority of place to the Gnome when fitting his larger machines with more powerful engines.

Be assured, sir, that I, as an Englishman, am sincerely sorry that we in England are making such a poor show, and that I would only be too pleased to see our manufacturers piled up with orders and their works filled to overflowing, and working day and night, if need be, and I trust the time is not far distant when at least one English firm will be making some impression on the market. But we cannot close our eyes to the fact that unless we can prove in some definite manner that English engines are the most reliable in existence, aviators and aeroplane builders will continue to refuse to depart from using the engine which has stood them in such good stead and proved its worth in such a practical and capable manner as the Gnome has done.

Let me explain to Mr. Clift that, although I might admit to thinking that at the present time the Gnome is the world's best engine, I certainly do not think, as he assumes, that "no engine not built on these lines can be a success."

From the tone of Mr. Clift's letter, I gather that he considers that aviators, instead of purchasing a well-developed foreign make of motor, should expend their cash in purchasing and experimenting with new and original types of English engines.

I think, however, that if he considers the matter, he will agree with me that it is the manufacturer's place to do the developing of their own engine, and that it is certainly a bit cool to expect other people to expend time and money on perfecting engines in which they have no financial interest whatever.

In the earlier days of aviation this sort of thing, no doubt, happened, but now that engines are obtainable which give immediate satisfaction, the matter assumes an entirely different aspect, and unless our engine makers make a bold move and do something to turn the tide of public opinion in favour of their product, they cannot complain if they do not meet with a satisfactory demand for their engines, for merely advertising them will not create a market, simply because the number of people who purchase aviation engines is comparatively small, and between them all naturally exists a certain bond of union, so that one and all very soon get to know the merits or demerits of a certain machine. Consequently, if a particular make of motor does not give satisfaction on its initial trials it behoves the manufacturers to refrain from advertising until it does, as certain firms have already found to their cost.

It is, however, encouraging to see that several English motors are now making up for lost time, and performing fairly well. I trust they will continue to improve until no doubt whatever is left of their efficiency and value to the aviator.

CHISWICK. ERNEST WARDE-FOX.

### Fatal Accidents.

Sir,—The number of fatalities occurring to the brave fellows who are striving to reduce the control of aerial navigation to a definite science is deplorable. Anything that can be done to lessen the danger of aviation is worth consideration. Therefore, at the risk of being laughed at, I venture to offer the following remarks. If you think, sir, they are deserving of notice, please accept them.

As far as my reading serves me I find that in the majority of fatal cases there was little or nothing to show why the machine got out of control. When it reached the earth the aviator was beyond aid, and the machine smashed.

Also, many of the fatalities have occurred to the very best aviators. The machines, too, are up-to-date, with the latest and best construction.

I am not aware of the present degree of knowledge as to the influence of air currents; but what is available these men would surely know. Still, these cases recur with painful frequency.

Which brings us to the question whether anything quite unconnected with the machine, or winds, may in rare cases be the cause of the aviator losing control of the machinery, and so, if only for a few seconds, leaving the machine at the mercy of gravity.

Most accidents seem to occur when the ascent had been completed and the aviator, in his descent, was approaching the earth.

Is it possible, then, that the aviator, coming suddenly into closer view of the earth and its buildings, and not having his power of ocular accommodation perfect, may experience either a spasm of accommodation or a failure to accommodate his vision to the rapidly altering focus, and so, for a brief moment, suffer from ocular vertigo and unconsciousness?

My knowledge of optics is poor, but I think the power of accommodation rests with the ciliary muscles and body, acting on the ligament of the lens. Consequently any affection or abnormality of these structures might cause the condition I have mentioned with disastrous results.

I should very much like to know if any oculist would think my idea worth entertaining, and if it would be an advantage to an aviator to submit himself to an examination periodically so as to ascertain if his power of accommodation is normal or whether there is any myopic spasm of accommodation, a lack of accommodation, or any abnormality whatever of the ciliary apparatus likely to cause an ocular vertigo and temporary unconsciousness.

My theory may be quite untenable and incorrect, but even so, if it led to the opening up of a fresh line of thought on the part of those who are grappling with the question of minimising the risks of aviation, it will have served some purpose.

There is a work on vertigo by Prof. E. Hitzig, Strasburg, but I have not been able to see it.

CHAS. WARD.

[Mr. Ward's letter certainly opens up a new line of thought which is worthy of investigation by those capable of following it. Without going into the question of actual unconsciousness caused by vertigo, there is no doubt that a large number of serious, if not actually fatal, accidents are caused by imperfect eyesight. That quality which in hunting men, racing-car drivers, aviators, and others, which is known as "judgment"—that is to say, the ability to judge the distance one will cover in the moment available—is almost entirely a matter of correct eyesight. Many an accident which is put down to stupidity is really attributable to defective sight, and it seems quite possible that the circumstances described by Mr. Ward, though perhaps not causing actual unconsciousness, might, through the defective operation of the connecting nerves between eye and hand cause very serious, and possibly fatal, accidents. Whether an accident is fatal or not is almost entirely a matter of luck, whether it be caused by a bad landing on an aeroplane, or by slipping on a piece of orange peel when crossing a road.—ED., THE AEROPLANE.]

### Some Aspects of Aviation.

Sir,—The surest sign of the vitality of any sport or industry is the production of numerous journals dealing with it. I have just been reading your extremely interesting and

practical periodical, THE AEROPLANE, which seems to me to be one of the best of its class. And after reading its interesting pages I was inspired to make a few notes from the point of view of an outsider who has taken part in organising a flying meeting without having yet achieved his ambition of actual flight.

First of all, many people annoy me by harping on the dangers of aviation. I can only reply, in what seems a paradox, by saying that, though it is dangerous, it is obviously the most healthy of all pastimes or undertakings. I foresee the time when physicians will order a course of aviation for weak lungs, and, indeed, I cannot understand that they do not prescribe it now. Several generations of travelling through the air will produce a race of men immune from most pulmonary diseases. Absolute freedom from the dust and other defilements of earth must have this effect. The pathology of aviation has yet received scarcely any attention, and yet I hold it to be of the utmost importance.

With regard to the dangers, I cannot help feeling that they will be reduced considerably in no far distant time. And on this score I am tempted to air a theory of my own, that the increased safety will result from the study of an element other than air, namely, water. The present aeroplane reminds me always of a ship at sea with all its ballast on deck. If it lists too much to starboard or port, over it goes, and down. Lateral stability seems to be the chief thing to be obtained, from the point of view of the non-expert. Some would say that a non-expert should not make any comments, but that is as much as to say that I may not remark upon the flavour of an omelette unless I can cook one.

Now, after this impertinence, let us consider another matter.

The ordinary observer will come to the conclusion that the day of "Aviation Meetings" is drawing to a close, which must necessarily be the case when the aspect of curiosity wears off. Then I presume that the professional flying man will depend for his living on teaching alone. When men race for prizes the public gains without contributing to the prize-money, which cools the enthusiasm of those who organise meetings. The tradesmen profit by having aviators in the towns where they fly, but I find the tradesmen slow to subscribe.

But let us consider the philosophic idea of flight. One meets men every day who feel proud of the tube-railways and the facilities provided for travelling underground, and who regard aviation with horror. Such men prefer the mode of transit natural to the worm. They can apparently see nothing noble or even attractive in a flight among the clouds. Might one not conclude from this that the imagination of man has become somewhat earthbound, and that, were it not for aviation, he may ultimately become as invertebrate as the worms he is content to emulate?

E. URWICK.

### The Second "Airman."

Sir,—I have just dug this up out of the *Egyptian Gazette* of September 12th, and thought it might make a second chapter to your history of Icarus, lately published, as it seems to sort of bridge over the large gulf between that unfortunate person and Santos Dumont.

Maida Vale.

W. LE MATTRE.

According to *La Réforme*, the first airman was an Arab of Spain, Ibu Firas, doctor to the fourth Ommiad Khalif, Abderrahman II., 821-852.

Ibu Firas had acquired a wide reputation not only as a medical man, but also as an inventor. "He had conceived," says an old Arabic tome, "a kind of clockwork mechanism, adapted to an apparatus by means of which he could rise up in space like a bird." Just what this apparatus was is not known. What is known, however, is that Ibu Firas one day wanted to submit his invention to the judgment of the people of Cordova.

Crowds assembled and beheld Ibu Firas rise up in the air as he had claimed. But his success was partial, for he could keep himself floating only an instant, after which he fell to earth amidst the cheers, ridicule, and laughter of the multitude. The ancient volume which contains this story is called *The Perfume of the Fresh Leaf of Spain*, and was written by Sheikh el-Makkari, an Arab writer in Moorish Spain of the seventeenth century.

### Span or Chord.

Sir,—In your issue for September 28th, under the heading "The most efficient type of model," P. K. T. writes as follows "A second point . . . biplane models. It should be



remembered that with a gap of  $1\frac{1}{2}$  to  $1\frac{3}{4}$  times the span, there is very little chance of interference losses." If gap, as I have always taken it, means the distance between the planes, surely P. K. T. means  $1\frac{1}{2}$  to  $1\frac{3}{4}$  times the chord? If not, what does gap mean? Let me also add how much I appreciate THE AEROPLANE.

Birkenhead.

L. BRIGGS.

[P. K. T. certainly meant "chord." It was purely a slip of the pen, and the Editor apologises for his carelessness in not making the correction.]

### Wireless.

In view of recent notes on "Wireless" in THE AEROPLANE, and the glowing accounts of Mr. Grindell-Matthews's experiments which appeared in certain papers, the following interview with Mr. B. C. Hucks, taken from the *Gloucestershire Echo* may be of interest:—

"Recently Mr. Hucks has been experimenting with Mr. Grindell Matthews, the inventor of wireless telephony, with the object of discovering whether a message voiced from the ground could be received by an aviator, and these experiments will be continued later on, for as yet no experiments have been but of an impromptu and incomplete nature. 'However,' said Mr. Hucks, 'the tests were satisfactory considering the circumstances. I certainly heard the voice of the sender, and although the message was too indistinct to be useful it was perfectly clear that communication was established, and Mr. Matthews was highly pleased.'"

The italics are ours. From private advice it is understood that Mr. Matthews has succeeded in telephoning three miles under favourable conditions, but from that to making his messages heard through the roar of an engine is a far cry.

### The Engines Aeroplane.

A paragraph is going round the daily papers to the effect that the Wright Brothers have produced an aeroplane which flies without the use of screw propellers and somehow manages to progress by flapping its wings.

This story seems to be based on the fact that the Wright Brothers, accompanied by Mr. Alec Ogilvie, have been for some time carrying on experiments with gliders at Kitty Hawk, where they made their first experiments with flying machines. The experiments gained with power-driven machines has induced the Wright Brothers to hope that it is possible, under proper circumstances, for a gliding machine to sustain a man in the air for a considerable period without the use of any power, and it is reported on quite good authority that Wilbur Wright has already succeeded in making a soaring flight lasting for 14 minutes on a glider launched against the wind from one of the sand hills on which the experiments are being carried out.

### Renaux Wins the Quentin-Bauchart Prize.

The competition for the Quentin-Bauchart prize finished on September 30th, the winner being Eugen Renaux.

This prize was given for the aviator who completed the greatest total of kilometres across country up to the date mentioned, and included in the conditions was a rule that an aviator carrying a passenger was entitled to add 25 per cent. to his total. By this rule Renaux succeeded in totalling 6,600 kilometres, carrying a passenger the whole time on his Maurice Farman biplane with a Renault engine.

The second man was Helen, on a Nieuport Monoplane with a Gnome engine, who covered 5,300 kilometres.

Renaux owes his position largely to the fact that he went through the European Circuit, which counted towards his total. Helen, on the other hand, has his various attempts for the Michelin prize to his credit, but not carrying a passenger, he only scored the number of miles actually travelled, Renaux's real total being almost exactly the same as Helen's.

In piling up this vast distance, which is actually about 4,000 miles, Renaux made, beside the European Circuit, three flights in July, three flights in August, and fifteen flights in September. No flight of less than 100 kilometres counted.

The third man in the competition is Tabuteau, who covered 3,400 kilometres, part of it on his Bristol biplane in the Circuit of Europe and part of it on a Morane monoplane.

The fourth and fifth men were Gilbert, on a R.E.P., and Védérines, on a Morane. The two last-mentioned have added little to their total since the European Circuit.

### The "May Fly."

The *Globe* says: "There is now a strong belief that the accident to the naval airship at Barrow was caused by the

lack of support between the aft and forward gondolas." This seems highly probable, as the machine had been lightened by the simple process of removing the gangway which connected the cars and at the same time acted as a tension stay to the lower portion of the apparatus. "Captain Sueter is expected to return to Barrow with orders as to what the Admiralty intend to do with the vessel." Might one suggest that an excellent use for it would be to erect what is left of the framework on shore, and use the sections now occupied by the separate gas-bags as stalls in which to house useful aeroplanes. The balloon cloth would do for wall and roof covering.

### The Record with Two Passengers.

Lieut. Milling, an officer in the United States Army, on September 26th, at Long Island, flew with two passengers for 1h. 54m. 42 s. 55., which is announced to be world's record.

### The Royal Aero Club.

At the last meeting of the Committee the following new members were elected: Percy Charles Brocas-Parsons, Samuel Pepys Cockerell, Walter John Edlin; and the following aviators' certificates were granted:—

139. Eric Clowes Pasley (Sommer biplane, Brooklands).

140. John Lewis Longstaffe (Blondeau-Farman biplane, Brooklands).

141. Lieut. A. W. Stuart, R.A. (Bristol, Brooklands).

### The Industry in France.

It helps one somewhat to realise the progress aviation is making in France when one hears on good authority that Régy Frères, who are among the biggest constructors of aeroplane parts in France, have turned out 2,400 pairs of wings in the course of the last eighteen months or so, and that their present organisation is such that they are now manufacturing six pairs of wings per day. Even allowing for the fact that a number of these wings are merely used to replace those broken in accidents, it still leaves an enormous number for new machines, and, of course, there are some dozens of other manufacturers at work also, turning out complete machines, wings and all.

### Morane Leaves Borel.

M. Léon Morane has now ceased to be a partner in the firm of Borel and Morane, which has hitherto manufactured the Morane monoplanes. The machine itself will still continue to be known as the Borel-Morane, and will be made by Borel Brothers.

### Sale and Exchange.

A firm worth considering when on the look-out for bargains is Weston Hurlin and Co., who make a speciality of sale and exchange business in engines, propellers, second-hand machines, and so forth. The firm issues every week a list of such articles as they have been able to acquire cheap or to obtain a commission to sell, and there is almost always something in this list which is a genuine bargain, and in addition there are usually a number of oddments which, though possibly out of date on a modern machine, would be quite useful for experimental purposes or for knocking about on school machines. When time permits, the partners put in some work on a machine of their own design which has several interesting points, but unfortunately they are generally so busy that, though the design was produced early in the year, they have not yet completed the machine. It is, however, to be hoped that they will be able to finish it before long, as it should help to solve several problems in aviation which need further investigation.

### THE VISITORS' LIST.

MR. C. HOWARD PIXTON, back at Brooklands again for a week or so, called to talk over the conditions of the Manville prize. Though naturally anxious to win Mr. Manville's £500 himself, he was, nevertheless, quite in agreement with the sentiments expressed in last week's AEROPLANE, and would much prefer to have a straight fight with Mr. Cody for the prize. However, the whole thing will be settled by the time these notes appear, and it only remains to congratulate Mr. Pixton on the thoroughly sporting spirit he has shown throughout. He is quite in love with Salisbury Plain as a flying ground, and believes it to be the finest possible training ground for cross-country flyers.

MR. J. A. W. BARR, who is interested in "Celon," the non-inflammable fabric varnish mentioned recently in THE AEROPLANE, brought in some excellent specimens of what can



be done with this material. It is not claimed that "Cellon" is incombustible, but, from various tests carried out at this office, it has been satisfactorily proved that when live flame is applied to a sheet of "Cellon" it does not catch fire, but merely frizzles, and flame cannot be produced from it. "Cellon" can be had either in the form of a sheet which is like a non-inflammable celluloid or as a varnish (more commonly known as a "dope") for fabric.

In the latter form it can be applied under pressure to the fabric before the fabric is fitted on the machine. In this case it acquires a surface like glass, but there is the obvious disadvantage that the fabric cannot be shrunk after being fixed to the machine. On the other hand "Cellon" can be applied as a varnish when the wings are covered. In this case the surface is much more shiny than that produced by any existing varnish spread with a brush on a fabric surface.

It is an additional advantage that it can be made of such constituents that the fabric will shrink after the dope has been applied, thus giving a perfectly tight surface to the wings. The great point in the varnish when applied in this way is that the fabric can be subjected to the most severe tests in the way of crumpling and rubbing without the dope showing the slightest inclination to part company from the material. Besides being as fireproof as possible for any varnish applied to any inflammable material, "Cellon" is waterproof, petrolproof, and oilproof, so that as far as it is possible to judge from samples, it seems just about the ideal material with which to treat wings and body coverings of aeroplanes.

**MR. H. J. D. ASTLEY**, who has been doing very little flying since the Circuit of Britain, pending the production of "Birdling No. 2," with a completely new design of landing chassis, remarked that the only flight he had made last week was one of about 50 ft. on a 135 h.p. Mercedes racing car at Brooklands. The flight, he explained, was quite unintentional, and merely occurred through the car hitting an excrescence on the track at a speed of about 110 m.p.h. He still believes that flying is quite a staid, sober occupation compared with driving racing cars, but he hopes to have a new monoplane ready in time to contest for the Michelin Cross-Country Prize.

**MR. GUSTAV HAMEL**, his duties as an aerial postman completed, called to tell the story of his dealings with the aerial post, and as far as one could gather, he is not anxious to undertake any further work of that kind. His chief concern at present is to see that Mr. Hubert gets the £500 which is morally due to him from the promoters of the scheme, and Mr. Hamel showed a decidedly interesting letter from the said promoters promising to use their best offices with the Postmaster-General to persuade him to sanction the payment of the necessary sum to Hubert.

**MR. RIDLEY PRENTICE**, now completely re-established after his recent accident, called to impress on *THE AEROPLANE* the fact that his accident was entirely his own fault, in that he did not properly test the workings of the switch of his motor before starting out for his first flight on the Gnome-Valkyrie, the result being that when he switched off before landing the engine stopped for a moment and then went on again, by which time he was so close to the ground that he could not get the head of the machine up properly and simply flew into the ground instead of on to it. Mr. Prentice was on his way down to the Isle of Wight for a short holiday, and hopes to resume work at Hendon in a few days' time. His faith in the Valkyrie machine is quite unshaken, and he hopes to be doing some really good flights before long.

**MR. E. T. WILLOWS**, paying a flying visit to London from Birmingham, gave an interesting account of the progress he is making with his latest type dirigible. His idea is that it should be possible to make a dirigible balloon capable of carrying a pilot and a passenger, and able to get up a speed of between 25 and 30 m.p.h. in still air, and sell it for a matter of £370. Such a machine should make quite an interesting and amusing little vehicle, and would come well within the means of quite a number of people in this country who are really sincerely interested in aviation, but who do not feel inclined to go to the trouble, or to take the risks, of learning to fly an aeroplane. Of course, such a machine can only be used in comparatively calm weather, but, even so, it should be possible to use it at least 200 days in the year and probably more, and the proud possessor of it could practically guarantee to give aerial trips to his friends one at a time at a comparatively small cost. The running expenses should not come to more than perhaps £3 or £4 per week, including the wages of a man to look after the engine, a job which can be undertaken quite easily by the family chauffeur, for one may assume that a man who is able to

afford a private dirigible balloon would also own a motor-car. Mr. Willows has practically given up the idea of continuing at Dunstall Park, Wolverhampton, and has procured an option on a new ground near Birmingham where he hopes to install not only a balloon ground, but a really good aviation ground. Should this scheme go through, he intends to take up the agency for some well-known maker of aeroplanes, of British make for choice, and he will probably build light, low-priced aeroplanes of his own design. Mr. George Heath, the well-known Birmingham motor agent, who has already taken an active part in aviation, and who has lent his aid to Mr. Willows in dispatching balloons from the roof of his garage, should be a valuable ally in the new scheme, and it is to be hoped that Mr. Willows and his energetic partner in E. T. Willows, Ltd., Mr. Gilbert Dennison, will ere long reap the reward of their enterprise.

**AN ENGINEER OFFICER**, who must remain nameless, courteously corrected certain inaccuracies which appeared in *THE AEROPLANE* recently. He pointed out that the office of Director-General of Ordnance does not exist, but that, doubtless, the writer of the article meant to refer to the office of Master-General of Ordnance, and further that the present holder of that office is an artilleryman, and not an engineer, so that the Engineers cannot be blamed for the present state of affairs. The writer reads guilty on both counts, the first being, perhaps, excusable in a mere civilian, and the second being a mistaken impression which is shared by quite a number of men in the Army. This officer who, while a believer in the aeroplane, is also convinced of the utility of the dirigible for military purposes, made one point in favour of the dirigible which is not generally recognised, namely, that on a hot day with little wind, when the air is full of heat remous which would make a slow aeroplane altogether unmanageable, and would make the driving of a fast machine so tiring as to wear the pilot out in a comparatively short time, a dirigible can go out and stay out as long as it likes without trouble to the crew except for the pitching and rolling of the vessel. He was exceedingly interesting on the subject of the ability of the dirigible to defend itself against the attacks of fast aeroplanes, because of its affording a steady firing platform, and incidentally paid a high tribute to the variable-angle propeller shaft, as introduced into this country by Mr. E. T. Willows. The writer wishes here to acknowledge the kindly spirit in which this visit was paid after the necessarily somewhat rude things he has felt compelled to say about that hard-working, valuable, and little thanked corps, the Royal Engineers. Unfortunately, however, junior officers will insist on growing up.

**MR. MURRAY SIMON**, late of the ill-fated Wellman-Vanman dirigible *America*, gave some interesting information about that unfortunate balloon. He is firmly convinced that but for the highly ingenious but quite impracticable combined trail-rope and store-room, they would have got across the Atlantic all right. He pointed out that, even if they had tested the machine on a calm day before starting, they would not have discovered any fault in their arrangements, for the trailer acted perfectly for the first twenty-four hours, and it was not till a sea got up that they discovered the effect of the apparatus. Mr. Simon believes that the Atlantic will be crossed by balloon next year, for Vanman is building a new machine on his experience with the *America*, and Brucker, who is to start from Cape Verde, is practically sure to get across with the assistance of the North-East Trades, though he will probably land in the West Indies, and not in the United States. Mr. Simon has no illusions about the intrinsic value of the *America* as a vessel for regular service, and aptly described her as being merely Columbus's caravel in comparison with the big airships of the future.

**MR. ISAACSON**, the inventor of the Isaacson radial engine, and **MR. WARDLE**, of Manning, Wardle and Co., the manufacturers of the engine, expressed their satisfaction at the sudden growth of interest in their engine since the results of certain tests, described in *THE AEROPLANE* some weeks ago, have become known. Mr. Isaacson, with justifiable pride, described a full-power run of an hour, with an engine which had only just been assembled, carried out for the satisfaction of Mr. Fenwick, of Planes, Ltd. The engine, which had never run before, pushed a propeller 10 ft. by 7 ft. pitch at flying speed, and after its test of an hour, followed by various throttle and ignition tests, was taken to pieces and examined, to see if there were any signs of uneven bearing at any point, but nothing could be found to show that it had been running at all, so Mr. Fenwick took the engine away with him, well satisfied. Mr. Challenger, of the Bristol Company, also

expressed himself very well pleased with tests to which he put another engine, which was afterwards bought by his firm. Mr. Handley Page has been using one for experimental work, the most trying of all work, for some months, and has nothing but praise for it. Mr. Hubert Oxley has been doing a large amount of good steady flying on his Blackburn at Filey with another Isaacson, and has had no trouble with it whatever. Altogether the engine is giving an uncommonly good account of itself, and considerably more is likely to be heard of it in the near future. Mr. Isaacson is himself a practical flyer, and had a quaint experience recently when flying an old school Anzani-Bleriot at Filey. The wind drifted him out over the sea, and as he was making for the shore the engine stopped. Being then in the elementary stage of flying he came down nose on instead of pancaking, so that the machine stood on her head and turned over in the water. Fortunately, he jumped clear sideways, and found himself up to his neck in water. But for his clearing sideways he might well have been held down and drowned. He hopes ere long to continue his training as an aviator and to win his certificate.

#### Mr. Hubert's Progress.

It is excellent news to hear that poor Charles Hubert is making quite satisfactory progress. A representative of THE AEROPLANE called on him at St. Mary's Hospital, Paddington, a few days ago, and found him surrounded by every care and comfort. He was quite bright and cheery, as usual, but, having had an attack of pleurisy, he was on a very strict diet, and was being very carefully watched. His many sympathisers have kept him well supplied with flowers and fruit, and altogether he was as happy as a man can be lying on his back with a couple of weights tied on to his legs to prevent them from shrinking as they knit. He is due for seven or eight weeks in splints, another four or five in plaster of Paris, and a few more on crutches, so we are not likely to see him about his beloved flying grounds till early next year. However, the doctors at St. Mary's agree that when cured he will be really cured, and that there is no reason why he should be permanently disabled in any way. He said that he was very much affected by his friend Gustav Hamel's effort to persuade the promoters of the "Aerial Post" to make some provision for him during his illness, and would always feel very much indebted to Hamel.

#### The Aero Models Association.

At the Model Engineer Exhibition, Royal Horticultural Hall, October 13th to 21st, the Aero Models Association can afford facilities for the exhibition of Aero-Models of all descriptions. Prizes will be offered for Aero Models which embody practicability, originality of idea, and excellence of construction. The nature and number of the prizes will depend upon the exhibits received, and will be decided by a committee representing the Aero Models Association and the Organisers of the Exhibition.

Entries must be made upon the form provided for the purpose, and must reach the Secretary of the Aero Models Association, Caxton House, Westminster, S.W., not later than the first post on Monday, October 9th.

Competition 1.—For the model showing the greatest merit from the point of design and workmanship in view of reproduction in a full size machine. (Class A.) Amateurs only. (Class B.) Amateurs and Manufacturers. Competition 2.—For models rising from the ground under their own power (open to all). Competition 3.—Scale models of existing machines (open to all). Competition 4.—Winding machines for electrically-driven models (open to all). Competition 5.—Model engines for power-propelled aero models (open to all). Competition 6.—Exhibition of Manufacturers' show models not entered for other competitions (open to all). In addition there will be a Loan Exhibit of Models used in early aeronautical experiments, prints, photographs, and other objects of interest. Further particulars may be had from A. B. E. CHEESMAN, Caxton House, Westminster, S.W.

#### The Manchester Model Aero Club.

Half a gale blowing across the Manchester Aerodrome, Trafford Park, on Saturday, when flying meeting was held. Numerous and exciting flights made mostly by models of the "Mann" type. Best flights were Mr. W. Wood, 1,200 ft.; Mr. Williamson, 1,180 ft.; Mr. Beswick Wilcock, 990 ft.; and Mr. A. Jones, 681 ft.

Flight of Williamson model was notable. It quickly mounted to 40 feet, and then, finding cross current, flew over a factory and disappeared. It was discovered, quarter hour later, reposing on railway track, undamaged. Another meeting will be held next Saturday, October 7th, at 2.30 p.m. The Secretary, Mr. KENNETH KIRKA, will be pleased to welcome new members on the ground.

#### Liverpool Model Aero Club.

Good meeting on Saturday, last day for Mr. Harrison's prize, which was won by W. S. Leeward with flight of 510 feet with a strong and gusty following wind; A. G. Pugh, second, about 300 feet. Flying meetings all through winter whenever possible. Competitions on Saturday, October 7th, for point-to-point race and duration. Prizes up, and an entry fee of 2d. will be charged. Committee Meeting, October 17th; General Meeting, October 20th, when winter's work will be gone into. Members earnestly requested to be present on all above dates. ALEX. GRINDROD PUGH (Hon. Sec.).

#### The Aero Models Association (Northern Branch).

On Saturday, competition was held despite adverse weather, and judged by the Hon. Sec. (Mr. Malcolm B. Ross), and Messrs. H. Brosse and W. Wenkes. Two first prizes of 10s. 6d. were given by the Earl of Ronaldshay, M.P., and second prizes of 4s. by the club.

Results: Event 1.—Getting off Ground; Competition—1st, A. Haulberg (1,195 ft.); 2nd, H. P. Weston (816 ft. 6 in.). Event 11.—Competitors flew models towards post 200 yards from start. Winner being one to land nearest post—1st, R. F. Mann (77 ft. from post); 2nd, R. P. Grimmer (136 ft. from post). Mr. Haulberg's monoplane, after rising from ground, flew out of sight into adjoining field. The "Mann" monoplane proved worthy of its name. Mr. Weston and Mr. Hurlin turned out good flights with their team of W. H. C. flyers, an unofficial flight of one dropping only 23 feet short of the post. Arrangements are in hand to obtain a members' room where meetings, discussions, etc., will be arranged for the winter. Full particulars will appear later. Secretary will be pleased to receive catalogues of models and accessories. New members are always welcome, and prospectuses may be obtained upon application to the Hon. Secretary, MALCOLM B. ROSS, 15, Highgate Avenue, N.

#### Manchester Aero Club.

Annual General Meeting of Manchester Aero Club will be held on Thursday, October 19th, at 7.30 p.m., at Midland Hotel, Manchester. F. ARKNEAD (Clerk to the Committee).

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERLON, London.

Telephone: Mayfair 6507

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
3 months, post free	1	8	3 months, post free	2	9
6 " " "	3	3	6 " " "	5	6
12 " " "	6	6	12 " " "	11	0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.

## An Education in Aviation

can be obtained from the following books:—

"The Art of Aviation," 10/6  
By R. W. A. BREWER ... ..

"Monoplanes and Biplanes," 12/6  
by GROVER LOENING ... ..

"The Aeronautical Classics." 1/- EACH  
Six numbers, by Sir GEORGE  
CAYLEY (1810), WENHAM (1840),  
and other early writers ... ..

By post from—

THE AEROPLANE, 166, PICCADILLY.



**'AAYRO'**  
MACHINES FOR  
EFFICIENCY.

A. V. ROE & CO., The Aviators' Storehouse,  
BROWNSFIELD MILLS, MANCHESTER.

Flying Ground, Weybridge.

Telegram: "Triplane"

Telephone: 698 Central



## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted **ONLY**—18 words **1/-**. 1d. per word after.

### PATENTS.

**AERO PATENT'S.** Inventors advised by first-class aero experts and taught flying, their inventions secured, manufactured and tried in the firm's own works, flying grounds and aeroplanes. Book of Instructions post free on mentioning this paper. W. P. THOMPSON & CO., Chartered Patent Agents and Aero Experts, 6, Lord St., Liverpool, and at London, Bradford, Birkenhead and Freshfield.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS.

**THE AEROPLANE** will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to **THE AEROPLANE**, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

### MACHINES.

**FOR SALE**, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**MACHINES**.—"Avro" Biplane, new, with 30 H.P. Green £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**MILITARY** type Farman, Gnôme Engine, cases and spares for sale, price £650. Instalments accepted from responsible purchaser. Apply Box 334, THE AEROPLANE.

### ENGINES.

**FOR SALE.** Genuine Antoinette engine, complete, in thorough working order. Also Humber 3-cylinder aero engine. Manager, Portholm, Huntingdon.

**50-60** H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—THE AEROPLANE.

### PROPELLERS.

**PROPELLERS**.—"Avro" Propellers of proven efficiency 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co. Brownsfield Mills, Manchester.

**CHAUVIÈRE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### TUITION.

**TUITION**, with or without limited liability, Blériot XI.; personal instruction.—CHANTER, Aerodrome, Hendon.

**TUITION**.—£50. Tuition in flying till Certificate is won. Pupils gaining Certificates weekly. More certificates have been secured on the AVRO than on any other "All-British" Aeroplane.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**LANARK AERODROME, N.B.** Tuition for R.Ae.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

### TUITION—Continued.

**BARRHEAD FLYING SCHOOL.** Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION CO., 185, Hope Street, Glasgow, or Barrhead.

**DEPERDUSSIN Aviation School** at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars apply to **THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD.**, 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

### EMPLOYMENT.

**AERO** and Mechanical Draughtsman shortly disengaged requires position, over 2 years' design and construction mono and bi-plane, can use tools, London and district preferred. Box 342, THE AEROPLANE.

### INVESTMENT.

**£5,000** CAPITAL wanted for extending Profit-paying Aeronautical Business, making and selling Aeroplanes, and carrying on Flying School at which many Certificates have been won.—Box 340, THE AEROPLANE.

### MISCELLANEOUS.

**PLANES, LIMITED**, Duke St., Birkenhead.—Monoplanes guaranteed to take purchaser as passenger 30 miles flight before delivery. 60 H.P. Green engine, 50 H.P. Isaacson, 30 H.P. Anzani, and 120 H.P. Delahaye in stock for aeroplanes and motor boats. Purchasers taught flying by Aero Club pilot. Hangars to let.

**HANGARS** TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

### SALE AND EXCHANGE.

**EVERYBODY'S CONVENIENCE SUITED.** Genuine bargains. Send for weekly list of Aeroplanes and Engines. Cheapest on the market, sale or exchange.—WESTON HURLIN & Co., P.F. Building, 13, Milford Lane, Strand.

**THIS** week's bargains. Send for lists: 7ft. 6in. Propeller, 4ft. pitch, £2 10s. new; 6ft. propeller, 4ft. pitch, £5 new; 6ft. propeller, 3ft. 6in. pitch, £5 or offer; 5ft. propeller, 3ft. pitch, £3 new; 6ft. propeller, 3ft. 6in. pitch, £5 10s. new. Several monoplanes from £10, less engine; 3 monoplanes with engine £50, £80, £150. WESTON HURLIN Co. (X Dept.), 13, Milford Lane, Strand.

### FLYING MODELS.

**"MANN" MONOPLANE.** We could, if we wished, sell you a "Mann" Monoplane for 7/6 and even make you a gift of an egg-beater as well, but we prefer the best materials and first-class workmanship to mere cheapness. At Bexhill on the 13th ult. Mr. Gwynne won two prizes with his "Mann" Monoplane, one being a silver cup, and at Brighton on the 16th Mr. H. W. Willis took two further prizes and made an unofficial duration of 90 seconds. The Scottish Aeronautical Society has offered a passenger flight to the first of its members to perform a duration of 60 seconds. Who will be the first to buy a "Mann" Monoplane and secure that P. F.? Complete machines 15/-, parts for constructing 5/-. "Mann" winders 4/- from Willis Bros., 14, Wellington Square, Hastings, and agents throughout the world.

**"M.S.C." MONOPLANE.**—A genuine  $\frac{1}{4}$ -mile flyer complete with geared wheel, post free 8s. 6d.—MURRAY STANGER Co., 20, Brograve Road, Tottenham, N.

**MODEL PROPELLERS**—Genuine CHAUVIÈRE—8in., 10in., and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, OCTOBER 5th, 1911

No. 18

## The "BRISTOL"

### Flying Schools

AT

### Salisbury Plain and Brooklands

ARE

### THE FINEST IN THE WORLD

*Because:—*

Their EQUIPMENT is ideal and is so complete as to entirely obviate waiting.

Their TUITION STAFF is composed of picked Aviators of the highest standing.

Their ORGANISATION is perfect and up-to-date.

SPECIAL TERMS TO NAVY AND ARMY OFFICERS.

Full particulars from—

The British & Colonial Aeroplane Co., Ltd.,  
FILTON, Nr. BRISTOL.

Last Month  
10  
Pupils took  
Certificates.  
Average Time  
of Tuition  
3  
WEEKS

Pupils are  
instructed not  
only to fly  
but in the  
assembling  
and adjusting  
of machines  
and motors

"THE AEROPLANE," OCTOBER 12, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY, ("Aero-Amateur")



Vol. I.] [REGISTERED AT THE G.P.O.]  
AS A NEWSPAPER.

THURSDAY, OCTOBER 12th, 1911.

No. 19

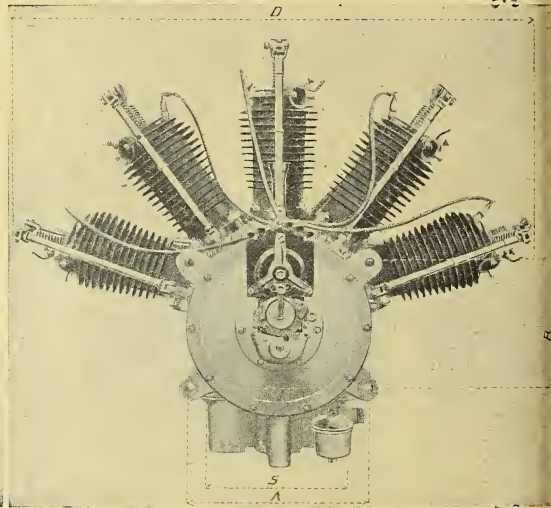
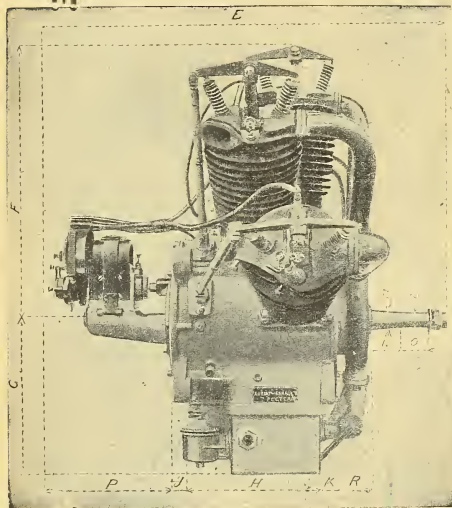
## The Winning of the Manville Prize.



Mr. C. Howard Pixton and Lieut. Harford, R.A., on the Bristol E.N.V. in the first of their exciting flights for the Manville Prize on Wednesday, October 4th. Although the machine was almost facing the camera, it was actually travelling right across the front of it. This series of flights also won the Brooklands' Season Aggregate Prize and the Day's Aggregate Prize, making a total of £680 in all.

SMITHSONIAN INSTITUTION OCT 27 1911

# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.63"	9.84"	.83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS...	435	CONTROLS ...	446
MANVILLE DAY AT BROOKLANDS ...	438	SINGLE-SEATER OR MULTI-SEATER? ...	448
AIR CURRENTS ...	442	THE WEEK'S WORK...	449
THE FRENCH MILITARY TESTS ...	443	THE VISITORS' LIST...	453

## Editorial Opinions.

Aeroplanes  
and Game.

Now that aeroplanes are becoming comparatively common objects in the air even in remote country districts, it may be opportune at this season of the year to discuss a subject to which attention has been drawn by Mr. G. S. Wilson, of the *Edinburgh Evening News*, a gentleman who takes the keenest interest in aviation and who is at the same time a good all-round sportsman.

In a letter to the writer he observes "What effect is aviation going to have on game and game preserving in this country? The effect of flying a kite over game is well known, and I should imagine a somewhat similar effect might be produced by the passing of an aeroplane, although possibly the effect of the kite is due entirely to its hovering-like a hawk. In the future, when there will be well-defined aerial routes between towns, the constant passing of machines overhead might well have a very prejudicial effect on a shooting, and might even drive the birds from that portion of the country. Even now it is quite conceivable that a couple of good drives might be ruined by an odd aeroplane passing over a shooting just as sport was about to commence. It will be argued that the birds will quickly get used to the aeroplane, but it would be interesting to know if any observations have been made on the subject."

So far as the writer knows no actual observations have been made on the subject. The Bournemouth Meeting last year was held over a piece of ground which provides quite reasonable partridge shooting, and at that time there were quite a number of birds about. It is probable that a number of them had already been driven away by the preparations necessary in preparing the Aerodrome, such as knocking down fences and filling up ditches, but even so, there remained a large number.

Whilst the flying was actually in progress there were very few birds to be seen, which would apparently show that the aeroplane had much the same effect on them as flying a kite over them in the manner suggested by Mr. Wilson, that is to say, that the birds kept to the ground, in fear of this strange new enemy. Once in a while, however, a bird did get up, and when it did it flew wildly and apparently without any definite objective; in fact, one of them flew right into Mr. S. F. Cody's shed, where it was captured by that indefatigable aviator. But it seems quite probable that if aeroplanes flew continually over one patch of ground birds would leave it altogether, owing to their being so much disturbed.

It is, however, certain that in spite of all the flying at Brooklands, the ground is as much infested with

plover as ever, who seem to take a particular delight in coming out when there are no machines in the air and demonstrating to the weather-bound aviators how they ought to be able to fly.

As a matter of fact the plover is not a good flyer at all, considered as a cross-country flyer in bad weather, but purely as a trick flyer he is quite excellent and is a distinct attraction at any aerodrome. Consequently, it is rather a doubtful point whether the plover do not merely continue to infest Brooklands out of sheer conceit in their own ability. However, as soon as the aeroplanes appear on the scene the plover immediately betake themselves to the fastnesses of the sewage farm.

Another bird that does not seem to pay any attention to the aeroplane is the lark. Salisbury Plain is crowded with them, and though larks do not care about flying in a big wind they will always turn out in calm weather and annoy human aviators by their ability to rise absolutely vertically. They use a terrific amount of power in doing it, considering their weight, and, size for size, they make more noise than a Gnome engine, so that they can scarcely be considered highly efficient; but, nevertheless, they have got that one advantage of being able to rise vertically, and they certainly make the most of it.

However, Mr. Wilson's questions apply in reality to game birds, and the writer would be very glad to have the views of any readers of THE AEROPLANE who may have had experience of flying machines regularly over shooting country.

Raising the  
Standard of  
Ability.

Naturally, the debates of the Committee of the Royal Aero Club are not reported for public consumption.

It is nevertheless possible on occasion to gather in the course of conversation the trend of some of these debates.

A subject recently under discussion was that of the advisability of instituting a more severe test for a superior certificate for aviators who might wish to be considered as being in a class superior to the ordinary aerodrome flyer.

This question was dealt with to some extent in THE AEROPLANE recently and met with quite a satisfactory share of approval from practical flyers. It appears, however, that some of the members of the Royal Aero Club Committee are opposed to the institution of such a certificate on the grounds that it would destroy the value of the older certificate, which is easier to win. To a certain limited extent that view is correct, because obviously when a man has passed a test for the superior certificate by making three

separate flights of 100 kilometres each across country, which is the test for the French Military brevet, he will naturally be regarded as a better flyer than the man who has only passed the old tests.

This, of course, is precisely what is intended by those who advocate this institution of the superior tests, and it certainly seems only fair that the man who is capable of flying across country should be regarded, and publicly acknowledged, as being in a higher class, so that when he is engaged professionally he will naturally command a higher salary as an instructor, or a higher fee for exhibition flights.

On the other hand the old certificate, which is, if the tests are properly carried out, quite sufficient to guarantee the holder as a safe flyer under ordinary circumstances, should be quite enough to secure a man a post as a school instructor or as an ordinary exhibition flyer under favourable circumstances.

It should also be quite enough, when held by a Service aviator, to qualify him for attachment to the Air Battalion with a view to further training before he is employed on special scouting work, and in time of war, when every Service aviator would be wanted, those who only held the old certificate would at any rate form a useful reserve corps, to whom machines commandeered from civilians might be handed for use in the absence of the regular flyers of the Air Battalion.

It is true, of course, that it would cost a certain amount of money to win the superior certificate, because the aviator would require further training after having won his first certificate, but that extra expenditure would be all for the good of trade and the extra training would certainly increase the value of the aviator in the future.

There is also, so far as one can gather, some kind of an idea that if the superior certificate were instituted it would decrease the number of pilots at the various schools, the idea being that unless a man could afford the higher fees necessary to win the superior certificate he would not think it worth his while to enter with the intention of taking the old certificate only.

This must surely be a mistaken idea, and judging

from the activity of the French schools it certainly does not seem to exist in France. From what one can learn it is therefore practically certain that the British representatives at the forthcoming conference of the International Federation will not bring forward a proposition for a superior certificate, but several other countries are strong advocates of raising the standard of flying, and one may, therefore, assume that this superior certificate will be instituted whether the Royal Aero Club Committee likes it or not, and if that be so this country might just as well have the credit of being the first to advocate these more severe tests.

**Bells versus Engines.** Somewhat undue prominence has been given by the daily Press, always ready to boom things which do not really matter, to the act of a certain parson at Hendon who wrote to the Home Secretary suggesting something should be done to stop aeroplanes at Hendon from flying during his particular hours of service.

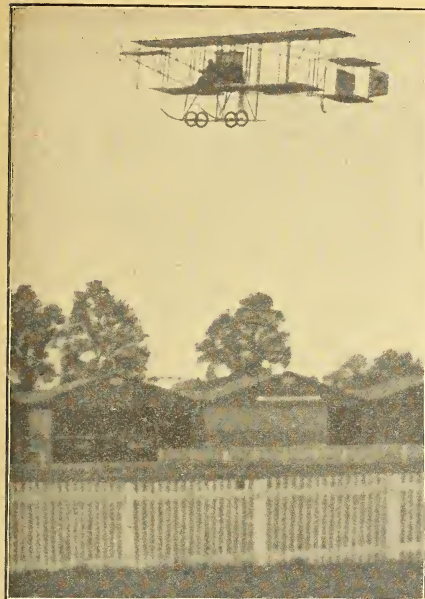
This action has been described as high-handed. Tactless it may have been; for doubtless, if properly approached, the aviators would have agreed not to fly near his church during the hours of service. But otherwise it was eminently practical, for if one means to hit at all it is much more economical to hit hard and get it over—as witness the cost to this country of not doing so in South Africa. Still the parson's objection has a certain claim to attention as showing the mental attitude of vested interests when confronted by a new idea.

Viewed strictly logically, what greater moral right has the Hendon parson to object to passing aeroplanes on Sunday evenings than has any Jewish rabbi to object to electric trams passing his synagogue on a Saturday morning.

One of the chief objections of the Hendon pastor seems to be that there is a public footpath through his churchyard, and that his services are still further disturbed by the tramp of many people passing through the churchyard on their way to the hillside which provides an excellent view of the aerodrome. This would appear to be a confession of weakness on



Lieut. Porte, R.N., as pilot, and Gordon Bell, as passenger, in the two-seater Deperdussin at Brooklands.



# E. N. V.

ALL BRITISH AVIATION MOTORS.  
**MANVILLE PRIZE of**  
**£500**

Brooklands Racing Season  
 Aggregate Prize of  
**£150**

Brooklands Duration Prize,  
 Oct. 4th.  
**£30**

All Won by C. Howard Pixton, Esq.,  
 using a 60 h.p.

# E. N. V.

Address all enquiries to—

**The E. N. V. Motor Syndicate, Ltd.,**  
 4, Hythe Road, Willesden, London, N.W.

## Special Offer of TWELVE 35-h.p. GREEN 'AVRO' BIPLANES

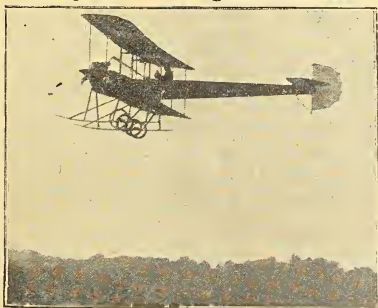


at **£400** each  
 Complete. Regular Price £600.



### THE MACHINE

The "Avro" Biplane is admitted to be Britain's most successful aeroplane. More certificates have been won on the "Avro" than any other All-British machine. Flies faster with lower horse power than any other machine in the world.



### THE ENGINE

is the premier aero engine of British make. Unapproachable for reliability. The Green Engine was the only British Engine to finish the Circuit of Britain with all parts sealed and intact.

**THIS OFFER HOLDS GOOD TILL**  
 but will be withdrawn immediately twelve are sold

**November 30th**

WRITE AT ONCE TO—

**A. V. ROE & CO.,**

The Aviators' Storehouse, BROWNSFIELD MILLS, MANCHESTER.  
 Telegrams: "Triplane" Telephone: 698 Central.



his part. One hears a good deal about the falling off in attendance at churches, and there certainly appears to be a difficulty in attracting people to listen to the discourse of the average clergyman; but it is surely admitting defeat when a pastor complains that people actually walk through his churchyard and yet cannot be induced to enter his church for a brief period.

The obvious remedy seems to be the holding of services in the churchyard itself, so as to arrest the progress of the heedless many as they pass the faithful few. Such outdoor services might have proved very attractive during the hot weather of the past summer.

Considering the question, however, merely as concerning a noise which causes inconvenience, it is doubtful whether the annoyance caused by aeroplane engines is anything like as great as that inflicted on

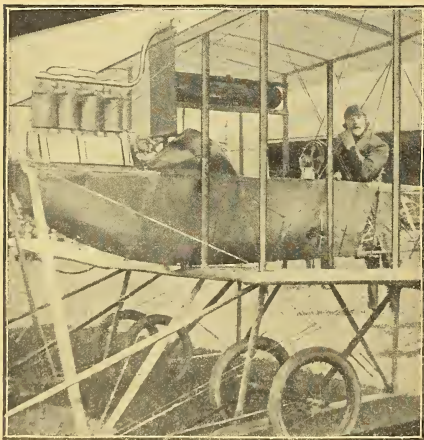
many peaceful households by the cacophonous tintinnabulation of the single bells which in these days of numerous small churches have taken the place of the melodious peals of the old abbey churches which were formerly the only edifices which used these instruments. Not only were the old peals pleasant to hear, but in those days they heralded the hour of worship for miles over the surrounding country. In these days of cheap alarm clocks there can be no real excuse for the nerve-racking clangour which the presiding genius of every little tabernacle seems to think necessary to announce the commencement of his ministration.

Most readers will agree that thoughts far from holy are conjured up by the intermittent racket of a small church bell at 7.30 a.m. on a Sunday after a week of the strenuous work necessary to sustain existence in these days of fierce competition.

## The Last "Manville" Day at Brooklands.

The flying on Wednesday at Brooklands was simply magnificent, and those people who have been in the habit of complaining that they never see any flying on race days certainly had to eat their words on this occasion. The outstanding performance of the day was Howard Pixton's flying on the all-British Bristol with E.N.V. engine.

Not only was Wednesday the last motor race meeting of the season, but it was the last day for Mr. Edward Manville's All-British Passenger Prize and the last day for the Brooklands Aggregate Time Prizes, so Pixton, who has now been moved to the Bristol School at Salisbury Plain, as instructor, came up on purpose to make sure of the prizes, in which he was already interested. In the result he captured altogether £680 as the reward of his consistently good flying on race days and "Manville" days throughout the year.



Howard Pixton on the old Avro on which he learned to fly.

This last day was as windy as is usual on Manville Prize days, but it was also cold and wet, which is altogether against the best traditions of Brooklands when motor racing is going on. Nevertheless Pixton started out at 2.10 p.m. with Lieut. H. H. Harford, R.A., as passenger, and made an astonishing flight of seventeen minutes. Going down the finishing straight to the Paddock against the wind the pair were tossed about like a cork on the sea, the machine standing still in the air at times. Back over the sewage farm with the wind behind

them they were travelling something like 70 m.p.h., and the way they drifted outwards at the turn was quite alarming to watch, for at times it looked as if they were just coming down on the banking. They were both nearly frozen when



Raynam, the Avro crack flyer, on the old biplane on which he learned.

they did come down, but after a rest of an hour, during which a rainstorm laid the wind somewhat, they went out again and did a further twenty-two minutes.

This time they ran short of petrol, and only by very skilful flying did Pixton manage to land the machine a few feet on the right side of a sand-pit, connected with levelling operations, at the south-east corner of the ground, the engine having stopped when they were right outside the track at the Byfleet end. After a rest of thirteen minutes Pixton went up again, this time with Captain Richey, of the Indian Army, as passenger, and flew for twenty-one minutes. After another ten minutes' rest the same pair put in a last flight of forty-eight minutes. Pixton's total for the day was, to be accurate, 108 mins. 40 secs., which won him a £30 prize for the biggest total of the day.

Noel, now one of the best pilot-instructors at Brooklands, and a member of A. V. Roe's school, took the second prize of £15 with a total of 64 mins. 10 secs. on the aged Avro-Farman, which really ought to be fitted with new ribs and fabric after this exploit.

The third prize of the day, £5, went to Herbert Spencer, who flew for 86 mins. 25 secs. on his fast and well-built biplane of Farman type, of whose construction he may well be proud. He is one of the Spencer Brothers, the well-known balloonists, and is rapidly becoming one of our finest flyers. Excellent flying was also done by Raynam on the little Avro with the 35 h.p. Green engine. Ronald Kemp, on the Flanders, the all-British monoplane which flies at 65 m.p.h. with a 60-80 h.p. Green engine, flew splendidly for thirty-five

# VALKYRIE

## MONOPLANES.

THREE TYPES.

40-80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES,

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

TUITION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

THE AERONAUTICAL SYNDICATE, LTD.,

ESTABLISHED MARCH, 1903.

COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## BLERIOT

### MONOPLANES

"1911."

Paris—Rome: 1st—BLERIOT. 2nd—BLERIOT

Circuit of Europe: 1st—BLERIOT. 2nd—BLERIOT

Circuit of Great Britain: 1st—BLERIOT

Circuit of Belgium: 1st—BLERIOT

Moscow—St. Petersburg: 1st—BLERIOT

London—Brighton: 1st—BLERIOT

Hendon—Brooklands: 1st—BLERIOT

London to Paris in one flight (3 hours, 56 minutes) on

BLERIOT,

etc., etc.

CATALOGUE FREE ON APPLICATION.

Terms for tuition at our London School of Aviation sent on demand

Tuition Free to all Buyers of Blériot Monoplanes.

All Correspondence to be sent to:

L. BLERIOT, Sole Manufacturer, PARIS &amp; LONDON

Head Office for the British Empire:

BELFAST CHAMBERS, 156, Regent St., London, W.

General Manager: NORBERT CHEREAU.

## THE "DEPERDUSSIN"

### MONOPLANE

"The Aerial Yacht"



Machines complete from £450 and upwards.

Valentine, first British Aviator in the Daily Mail Race, on Deperdussin-Gnome 50 H.P.

Ewen's flight across Firth of Forth and back on Deperdussin-Anzani 28-32 H.P.

AVIATION SCHOOL AT BROOKLANDS.

Special terms to Army and Navy Officers.

Full particulars from

THE BRITISH DEPERDUSSIN AEROPLANE SYND., Ltd.,

30, Regent Street, Piccadilly Circus, LONDON, S.W.

Phone: 280 GERRARD. Wire: "SANTOCHIM—LONDON"

## Howard T. Wright,

110, HIGH STREET, MANCHESTER SQUARE, W.

TELEPHONE—8574 GERRARD.

WINNER OF DE FOREST PRIZE.

... Eight Types ...

Monoplanes

from 40 to 80  
miles per hour

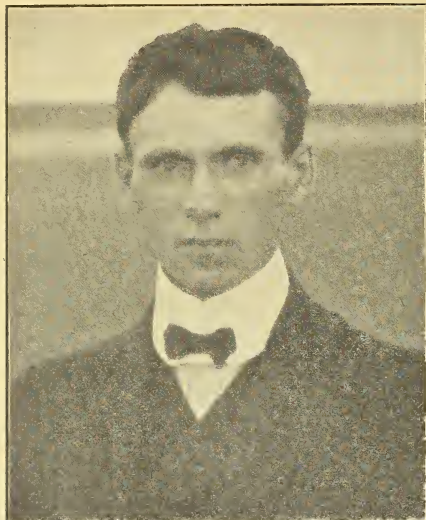
Biplanes : :

from 36 to 50  
miles per hour

CATALOGUE ON APPLICATION.







Above: Noel, third man in the Season's Aggregate, and second in the day's flying. Below: Spencer, third man in the day's flying.

minutes, but the engine had recently been overhauled and was not properly tuned up, so she was not lifting well.

Lieut. Porte, R.N., with Gordon Bell, the chief pilot of the Deperdussin School as passenger, flew the new Deperdussin two-seater at a height varying from 700 to 1,000 ft., and gave everyone a fine impression of the machine, which was making its first public appearance.

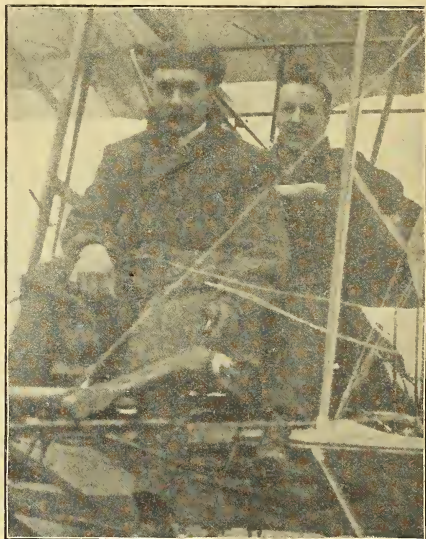
Blondeau, on the Blondeau-Hewlett Farman-licensed biplane, also flew very cleverly, as usual, close to the ground, which, though people do not realise it, is far more difficult than flying fairly high.

At times seven machines were in the air at once, and made a most impressive show.

The prizes for the best aggregate of flights on all race days during the season worked out as follows: First.—Pixton, 453 mins. 33 secs., £150. Second.—Raynham, 225 mins. 30 secs., £100. Third.—Noel, 94 mins. 10 secs., £50. This was Noel's first appearance in the competitions, but his long flights on Wednesday totalled more than several shorter flights by other competitors on previous days.

It is worthy of note that several of Pixton's flights early in the year were done on an Avro, and that he won his certificate on an all-British Avro biplane, so the Avro School may well be proud of the fact that all three prizes were won by pupils of their school.

Both the Bristol E.N.V. and the Avro-Green combinations have shown conclusively that when properly looked after they are able to hold their own against any foreign products.



Howard Pixton on the Bristol E.N.V., with Lieut. Harford, R.A., his passenger, on his first two flights on Wednesday.

#### Mr. Cody's Fine Effort.

On Wednesday, October 4th, Mr. S. F. Cody made a very plucky effort to carry off the Manville Prize. Previously Mr. Pixton was leading with 2h. 36m., and Mr. Cody was next with 2h., and he made a fine addition to his aggregate in spite of the wretched weather.

He had great difficulty in finding a feather-weight passenger of four or five stone, his own weight being sixteen stone. He, however, found a willing lad, a Farnborough boy, named Johnny Bowdery, ten years of age, who was delighted at his opportunity. The lad, accompanied by his mother, was early at Mr. Cody's shed on Laffan's Plain.

All day wind and rain prevailed, and flying seemed out of the question, till after 4 p.m. Then another difficulty arose, the engine refusing to start, and more valuable time was lost. About 5 p.m. the machine started and a fine flight was made for 38 minutes only, being stopped by the time limit at sunset. Master Bowdery was much pleased with his flight. Lieut. A. G. Fox, Air Battalion, R.E., acted as official time-keeper for the Royal Aero Club.

If Pixton had not flown on Wednesday, Cody would have beaten him by two minutes, but, thanks to Pixton's big flight, the matter is now settled beyond doubt, and there is, thank goodness, no need to revive the question of the ambiguous rule.

All honour to Cody for his plucky fight against bad luck, and may he yet carry off a prize worth having.



# Universal Puncture Stop

DOES NOT PERISH THE TYRE.  
DEFIES PUNCTURES.

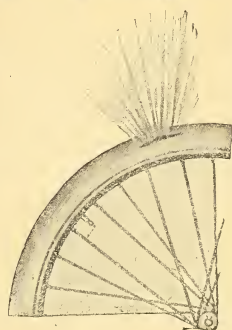
This could not happen. →

1 Box sufficient for 1 Cycle Tyre.

2 Boxes sufficient for 1 Motor Cycle  
or Aeroplane Tyre.

Full instructions with each box.

PRICE 1/6 PER TIN.



**The Universal Aviation Co., Ltd.,**  
166, Piccadilly, W.

Telephone:  
3504 Mayfair.

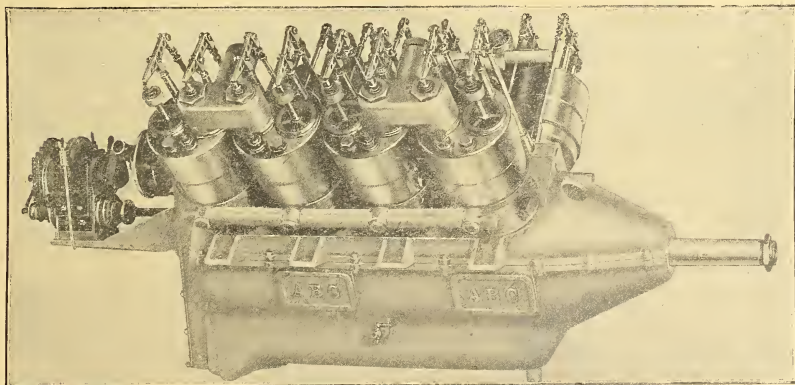
Telegrams:  
"Birdling, London."

## A. B. C. AEROPLANE ENGINES

Manufactured by the All-British (Engine) Co., Ltd.

40-h.p. 4-Cyl. Vertical, £275; 80-h.p. 8-Cyl. "V" Type, £450.

(A 120-h.p. 12-Cyl. "V" Type, £675). Under 3 lbs. per B.H.P.



London Agents: The Universal Aviation Co., Ltd., 166, Piccadilly, W.

## AIR CURRENTS.

## Imaginary Interviews.—No. 1.

It was with great difficulty, and only as the representative of the powerful organ I write for, that I was able to see Gustav Hamel in the pretty rustic hangar at Hendon, where he keeps his beautiful birdlike monoplane and the powerful motor-car of which he is so justly proud.

As he stood there oiling some intricate part of its machinery, his face flushed with the exertion, there could be no two minds that the sobriquet, "The Schoolgirls' Dream," by which he is known to his intimates, was justly deserved. His fair, crisp, curling hair, the desire to stroke which, it is rumoured, has wrecked so many an otherwise happy home, shone like spun gold in the rays of the setting sun.

A slow, haunting smile overspread his features as he turned to greet me.

"Do you know that though she is called a six and three-quarter horse car by Royal Automobile Club rating she develops 373.4 horse-power on the brake, and I have got 139½ miles an hour out of her?"

I looked instinctively for the speedometer.

Reading my thoughts with quick intuition, he added: "I don't need one; I can always feel the speed I'm going at."

At that moment a messenger entered with the evening post, which included invitations from a duchess, an archbishop, and a picture palace proprietor, all of which he carelessly tossed over to his secretary, a dark, sinister man with spectacles, who was standing by.

He lightly hummed Beethoven's famous Sonata in E minor, which changed to the plaintive notes of *Oh! Dry those Tears* as his eye fell on a pool of water on the floor.

"Mr. Hamel," I ventured, "Can you give me your opinion of the progress of aviation in Cochinchina?"

For a moment he gazed out into the fast gathering dusk, then turning to me with a winning smile, "My radiator must have been leaking. So pleased to have met you. Good-bye!"

And so ended an afternoon, the pleasant memory of which will long linger.

PRISCILLA.

## Seven Little Cylinders.

A PATHETIC HISTORY IN ONE RECEIPT, A FEW VERSES, AND AN ADVERT.

\* Mr. A. V. Ator, Dr. to Messrs. Gaygals and Co., Ltd. One 50 h.p. Chrome Rotary Engine, £550. Received with thanks.

Seven little cylinders humming like a hive;  
Two sooted sparking plugs, now there are five;  
Five little cylinders, feeling rather sore;  
Bang! goes a tappet rod, now there are four;  
Four little cylinders, coughing horribly,  
One cracked connecting rod, now there are three.  
Three little cylinders got too much to do;  
One stops from "cussedness," now there are two.  
Two little cylinders, pretty nearly done;  
One gives a final gasp, now there is one.  
One little cylinder, very much disgusted,  
Blows itself to Jericho—now the lot are "busted."

FOR SALE.—About 150 lbs. weight of scrap iron. Suit Job or other patience expert. Owner going abroad to try and forget.—Apply, A. V. Ator.

Every aviator's certificate issued under the International Federation agreement bears, in six languages, a note which reads: "The civil and military authorities, including the police, are requested to aid and assist the holder of this certificate to the best of their ability." Two of our viators, who had been spending the evening in Town, found themselves short of money for a taxi, with a long journey before them in the small hours, and the world seemed cold and unfriendly. Suddenly one of them was seized with a brilliant idea. Producing their certificates, they approached the first police constable they met, and persuaded him to read, in all six languages, that all-inclusive note. Then they besought him to tell them where, at 2 a.m., they could obtain a little light refreshment to fortify them for their long tramp. The constable was all sympathy at once, but, after due consideration, could suggest nothing better than—Vine Street.

## Revised Rules for the Army Air Battalion.

## QUALIFICATIONS FOR SELECTION FOR APPOINTMENT.

PRESENT QUALIFICATION.	SUGGESTED ADDITION.
"Possession of an aviators' certificate."	Obtained at own expense preferred.
"Previous knowledge of aeronautics."	Must not in any case exceed that of those in command, or not ostentatiously so.
"Rank not above that of captain."	Boy Scouts not entertained.
"Good eyesight."	Able to see through: (a) A brick wall. (b) Government tactics. (c) Also able to visualise the aeroplanes that ought to be there.
"Good map reader and field sketcher."	No post impressionists need apply.
"Unmarried."	"My wife won't let me."
"Not less than two years' service."	Unimpeachable references required from previous employer.
"Under thirty years of age."	And not under ten.
"Good sailor."	Tinker, tailor, and the rest of it, according to the rhyme of our childhood.
"Knowledge of foreign languages."	Especially those containing adequate expressions for relieving the feelings.
"Taste for mechanics."	But cannibalism not encouraged.
"Light weight."	Jack Johnson and Gunner Wells barred.

On joining the Air Battalion each candidate will go through a six months' probationary course which has nothing whatever to do with the matter in hand, and will include various duties, from mending the commanding officer's socks to giving the barracks cat its daily milk. If during this period he shows no aptitude for the work (i.e., making a fool of himself) he will rejoin his unit—or not, as the case may be. D. M. H.

## The Song of the Sewage Farm.

Sing a song of Brooklands, that's the place for us,  
If you want to taxi borrow someone's bus;  
Something large and heavy, lots of framework, too,  
Something that will take the bump without hurting you.  
Down along the Sewage Farm sweet the breezes blow,  
Four and twenty "remous" waiting in a row.  
Some are short and curly, some are tall and straight;  
(Wipe your feet on ent'ring. Please to shut the gate.)  
When your plane approaches mind you keep your head,  
Though its very conely in the sewage bed.  
Should you wish to settle where you've had a fall,  
Terms—on application—are extremely small.  
Are you feeling purple, blue, or any shade,  
Come and have a flutter on the new parade.  
Send a wire beforehand, "Coming down. Prepare."  
Then the little "remous" will be waiting there.  
As the air around you's strong and rather hind,  
See your ties are labelled "Guaranteed fast dye."  
If you're out for trouble, or if you're out for fun,  
The Sewage Farm provides it—free—for everyone.  
If you do not hurt it, you'll not come to harm,  
Happy land of Brooklands, dear old Sewage Farm.

D.M.H.

"The Army airship Gamma made a successful appearance yesterday, being 'wrecked' by means of the emergency cord before anything else could happen to her. An enthusiastic officer stated that the affair was a ripping success." This from the *Evening News*, once the enthusiastic supporter of the *Daily Mail* Du Cros-Clement-Bayard £20,000 dirigible. Fate has indeed its ironies.

The following is from *L'Auto*: "Le monoplane de construction française que le lieutenant H. E. Watkins doit piloter au cours de son expédition antarctique a subi les essais et il arrivera sous peu à Adelaide. Le lieutenant Watkins espère pouvoir emmener un passager à bord et franchir les 400 kilomètres qui séparent Adelaide du pôle Nord en 5 heures." Both distance and direction seem a trifle confused.



## The French Army Aeroplane Trials.

Interest this month centres on the French Army Aeroplane Trials, and some notes on the machines entered will, doubtless, be opportune, as well as general news as to the progress of the tests.

The Antoinette machine has already been illustrated in THE AEROPLANE, and since the photographs appeared Latham is reported as having made satisfactory test flights. If the machine does well in the trials it may safely be said to be a step forward in design, for the removal of all stay-wires and the complete casing of the landing chassis in stream-line petticoats are decidedly moves in the right direction. Apart from this there is no distinct advance in design anywhere, though considerable ingenuity has been shown by some designers.

One of the most likely winners is Blériot. His 100 h.p. three-seater, with the seats tandem, looks a very solid job. To get over the difficulty of landing in tilted ground, he has made each of his landing wheels in triplicate, so giving six tyres to land on. The three hubs and three rims of each wheel have the spokes so crossed from outside to inside that it should be almost impossible to buckle the wheels. To prevent the machine from standing on its head when landing on rough ground the whole chassis is brought far forward, in the manner advocated in Mr. P. K. Turner's article on "Landing Chassis" which appeared in THE AEROPLANE recently. This arrangement is made possible by the tandem seating of the passengers, which throws the centre of gravity back, and so permits the wings to come back also. The chassis is very high, so that the fuselage when on the ground is high in front and low behind. Owing to this the pilot, if he lands properly cabré, can scarcely upset his machine. Strange to say, the machine has the old-fashioned ailerons on the tail and an open fuselage aft of the last passenger seat, both points open to argument. The high chassis also leaves the propeller well clear of the ground, and should help to save it from breaking when landing in rough country.

### The Landing Ground

Nearly all the constructors have paid special attention to this question of "landing in the rough," but for the purposes of these trials they need not have troubled so much, for the authorities' idea of a *champ laboré*, or tilled field, turned out to be a nicely harrowed and rolled field, which gave rather a better surface than do many aerodromes, and, in consequence, the ordinary standard chassis would have been quite adequate in most cases.

One firm which seems to have realised this is the Deperdussin, who have not departed in any way from the standard pattern chassis, and have merely made the struts stouter and stronger in proportion to the 100 h.p. engines and three passengers they have to carry. The "Deps," as they are familiarly called, should make a splendid showing.

The Bréguets are, at first sight, just ordinary standard machines, like those over here during the circuit, but on closer inspection it will be seen that they have a much greater span, and that the whole body has been raised a foot or more above the lower plane, so improving the machine considerably, as the effect would be to make the machine quicker on the controls and to do away with the tendency to swing pedulum fashion, which was so noticeable on de Montalant's machine, a tendency which is always caused by a low centre of gravity. The Bréguet, thanks to their experience during the past twelve months, should give a very good account of themselves.

The Henry Farman three-seater is one of the quaintest things imaginable. To balance the 100 h.p. engine, the unfortunate pilot and both passengers are perched out in front of the lower plane, even the rearmost passenger being some considerable distance in front. For some unexplained reason Farman has chosen to place his upper plane much further forward than the lower one, à la Goupy, so bringing his centre of pressure forward more than ever, and making it absolutely necessary to carry all this weight in front of the lower plane so as to take the load off the tail, for he has now realised that if a machine is to be longitudinally stable it must carry practically no load on the tail. No protection is given to the crew either against collisions after landing or against the weather, nor is any alteration made in the chassis design to provide for rough landings, everything being left to the skill of the pilot. Considering the machine critically, whether from a practical or from an aerodynamic point of view, I cannot find anything particularly in advance of previous design.

Two very interesting machines are the Astra-Wright's, the biplane and the triplane. The triplane is horribly ugly, and should be very heavy on its controls, having a huge unbalanced rudder and stabilising flaps, but it ought to be able to lift a house, the aspect ratio being enormous. There is no landing chassis, properly speaking, but there are four huge disc wheels let into the lowest plane.

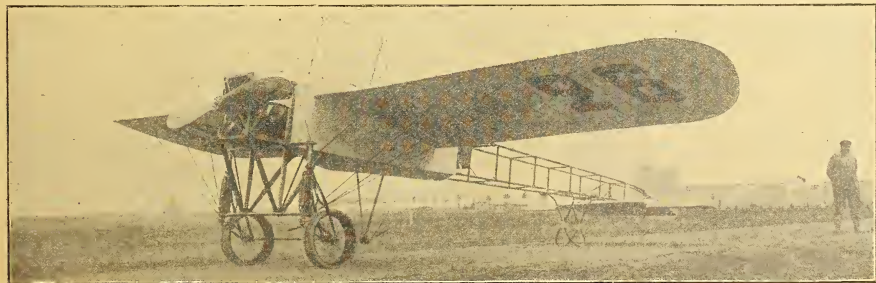
The biplane, on the other hand, is one of the handsomest machines in the competition. It is, in general outline, like an enormous Avro, but the planes are built with the Wrights' patent strut junctions and warp, and are double surfaced, with, apparently, a perfect Phillips entry. The fuselage is of excellent streamline form, and holds three, two pilots, each with a full set of controls, and a mechanic or observer behind the 75 h.p. Renault engine, but still so far forward as to be about on a level with the front edge of the planes, where he can see everything. If the pilots are good and the construction is right, this machine ought to run some of the better-known firms very close.

The Goupy remains much as it was originally, with genuine ailerons for lateral and longitudinal control, and the upper plane forward of the lower one. It also retains a chassis of the original Blériot type, only the whole machine is bigger, stronger, and heavier. It is not pretty, but it flies well, in spite of interference losses between the planes.

The freak machine of the whole competition is poor Louis Paulhan's triplane. If Paulhan has been paying for his own experiments this year he cannot have much of his last year's prize money left, for, so far as one can gather, his only customer has been the British War Office, to the extent of one machine which does not fly. Presumably there is some theoretical argument to justify the existence of his latest production, but that argument is not obtrusively evident, and the whole machine looks an even less probable flyer than his original attempt, and that was quaint enough in all conscience.

### Troubles at the Start.

Naturally, a few things caused trouble at the start of the competitions. Sommer, bringing his machines over from Douzy on wagons, had them blown over by the gale, and so badly damaged that they could not be got ready again in time for delivery. The single Nieuport had a similar experience, but only one wing was damaged, and it was duly brought to Reims, whereupon sundry other constructors objected to its



The 140-h.p. Military Blériot. Note the triple tyres and the old type tail.





The Henry Farman entry. Note the "staggered" planes, and the position of the three seats.

reception by the army authorities on the ground that it was not delivered in proper flying condition, whereupon little Weymann, jealous for his dead chief's good name, took it out and flew it, in the worst of weather, with the damaged wing just patched up temporarily. Poor Nieuport had, I hear, several novel machines in preparation for this competition, but his death upset everything at the works, so only a standard type machine could be put in.

The machines entered by Louis Clément with Aviatik motors were disqualified, on objections lodged by several makers, for having German engines, which put them out of court at once, and so the final number of machines actually in competition on the opening day was thirty-five.

The first couple of days were devoted to marking and weighing the machines, and after that no official flights were made for three or four days, owing to wind and rain. Nevertheless several pilots brought out their machines to test them. The Deperdussins and Hanriots were particularly active, flying backwards and forwards between the military camp, where the tests are to take place, and their own headquarters on the Plain of Bethény. Henry Farman, Fischer, and Bill all had their Farmans out, testing them with full load on board.

After all the machines were gathered at the military camp a number of the motor constructors tried to induce the officials to make awards for petrol consumption, an idea which in itself seems eminently sensible, for obviously the maker of a satisfactory engine is entitled to credit if his engine keeps a certain load in the air for a certain time on less petrol than another. Engine awards on a basis of kilogramme-minutes per litre would have been decidedly interesting when carried out with

military thoroughness and impartiality, and it is a pity the authorities decided against including such a test. The only objection to it is that with an inefficient propeller, or one unsuited to the machine, an engine would naturally consume more petrol than if everything was in perfect tune.

The following details of certain of the machines may be of interest for future reference.

Blériot.—140 h.p. Gnome (two 70 h.p.'s coupled). Surface, 25 sq. metres; weight in flying order, 780 kgs.; span, 11.35 metres; length, 8.5 metres.

Farman.—70 h.p. Gnome. Span, 16 metres; length, 9.9 metres.

Astra Triplane.—75 h.p. Renault. Surface, 48.75 sq. metres. Span, 13 metres; length, 9 metres; weight in flying order, 1,050 kgs.

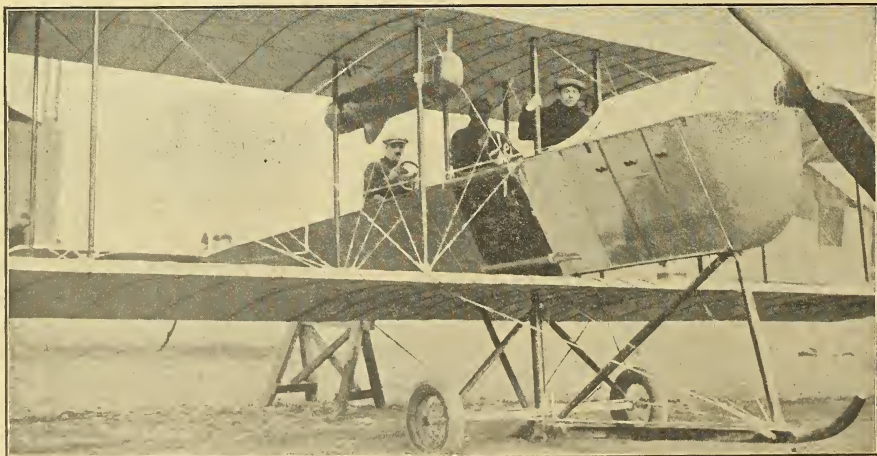
Paulhan Triplane.—75 h.p. Renault. Surface, 63 sq. metres; span, 13.8 metres; length, 10 metres; weight in flying order, 1,050 kgs.

Bréguet Biplane.—140 h.p. Gnome. Surface, 33.75 sq. metres; span, 13.6 metres; length, 9 metres; weight (f.o.), 1,100 kgs.

Goupy Biplane.—75 h.p. Chenu. Surface, 56 sq. metres; span, 14.2 metres; length, 10.6 metres; weight (f.o.), 980 kgs.

#### De Conneau's Accident.

Friday last was the first day of reasonably fine weather, and several machines turned out with their full 300 kilogramme load, but not for official tests. The notable event of the day was Lieut. de Conneau's smash with the 100 h.p. Blériot. He, with Leblanc as passenger, took out the 140 h.p. Blériot at 7.45 a.m., and, after flying about for a while, arrived at



The fore part and chassis of the handsome Astra biplane, which looks like a very much enlarged Avro.

8.40 a.m. over the clover field at Montcornet, 30 miles from Reims, which is one of the official test landings. Just then a petrol pipe broke, and the pair made a steep but safe landing. A repair was made, and at 9.30 they started off again, came down outside the field, went up again, and at 9.45 landed in the field itself, very roughly. The machine bounced 10 ft. into the air and came down flat, smashing the chassis and driving the motor into the ground.

De Conneau and Leblanc were pitched out of their seats, but dropped back into them unhurt. The accident was apparently due to the fact that the grass was so long that the pilot could not see where the ground began, and as the field had not been ploughed for two years the surface underneath was very rough. Also the crowd encumbered the ground, leaving only 200 metres clear before running into a sunken road. De Conneau estimated the speed of the machine at about 105 kms. per hour; and said it slid out a great deal at the corners, which is not surprising considering its load.

Immediately after the smash Leblanc went off to Reims to get ready a new 100 h.p. machine, and in the afternoon de Conneau took it out to test it, alone in the machine and with a light load. He started at 4.45, rising easily, but ten minutes afterwards he came down again, close to the hangars, the machine bouncing just as the other one had done in the morning at the test ground. However, having less load, nothing broke, and it ran along till it came to a ditch, into which the wheels dropped, the machine promptly standing on its head and turning over. De Conneau tried to jump clear, but unfor-

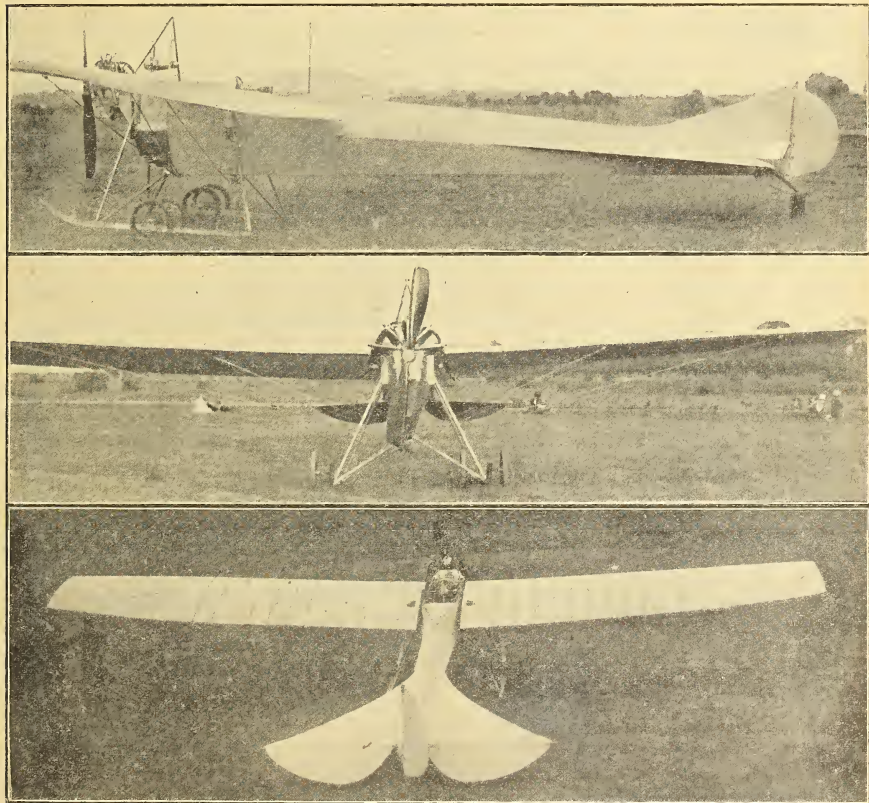
tunately did not get out far enough sideways, so that when the fuselage came down it fell on his leg, breaking the shin-bone and trapping him underneath. He is, however, expected to be all right in about a month.

#### The Real Beginning of the Tests.

The official tests properly began on Sunday. Prevost, on a Deperdussin three-seater, making a trial flight, was about to land, when, seeing several machines in his way, he had to alter his course suddenly, and came down on to the rope which marked the limit of the ground. The jerk on the rope pulled up one of the stakes holding it, and the stake hit a soldier in the abdomen, wounding him severely. Prevost's machine was only slightly damaged.

Vidart, on another Deperdussin, with two passengers, made a fine flight to the official clover field, and made a good start out of it, but, in getting out for his second flight, turned his machine over, fortunately without hurting himself or his passengers, but the machine was destroyed.

Fischer, on the 100 h.p. Henry Farman, and Bill, on the 70 h.p., also Barra, on the 70 h.p. Maurice Farman, made official starts, but were brought down by fog eighteen miles out. Afterwards Fischer went on, and did the necessary landing tests. Barra went back to Reims and made a fresh start. Bill broke an oil-pipe, but continued the tests after repairing. Renaux, on the 75 h.p. Maurice Farman, also completed the tests. All the machines were brought back by road, according to the rules. The Astras, biplane and triplane, made unofficial tests with great success.



Elevations and plan of "Vickers II," now at Brooklands, where the Vickers' Aviation School will start operations at once. Several pupils have already joined.



## Controls.

By P. K. TURNER.

It is universally admitted that the controls taken altogether are one of the most important parts of a machine, and it is therefore all the more extraordinary that so little attention is devoted to making them efficient.

Any particular control is bound to comprise three parts: The hand gear (often worked by the feet), the transmission gear, and the application of the control.

### Hand Gear.

On any machine there are usually three controls which are worked more or less in combination. The hand gear for doing this is diverse in character, but it is possible to split it up into a few inclusive types; the first in order of seniority—and worst—was the control of the original Wright. This, in common with the Antoinette and the new modified Wright control, suffers from a great disadvantage in not being "instinctive"; that is to say, that it does not depend on the movement which a pilot naturally makes when the machine needs controlling.

The original Wright control consisted of a lever on each side of the pilot; one of these levers had a back and front movement only, and controlled the elevator. The other was universally jointed, and controlled the rudder by a back and front movement and the warp by a sideways movement. In the new Wright the elevator remains as before, but the other lever has a back and front movement controlling the warp and rudder in unison. It is provided with a pivoted hand grip at the top, the sideways movement of which operates the rudder apart from the warp.

The idea of combining rudder and warp in one lever was that, owing to the extra resistance caused by warping, it is always necessary to use the rudder in order to keep on the straight course. The Wright Bros. therefore place the two controls on one lever, although doing this means that either the rudder or the warp is worked by a back and front movement which involves the necessity of the pilot remembering that, for example, a forward movement steers right or left as the case may be. An instinctive control, of course, involves no tax on the pilot's memory.

The Poynter control retained this advantage of combined rudder and warp, while at the same time making both controls instinctive. This was achieved by mounting a vertical steering wheel on a column, a back and front movement of which worked the elevator, while twisting the wheel operated the warp. The rudder was controlled by a lever working on the same centre as the steering wheel and normally clipped to it, so that twisting the wheel worked the rudder as well as the warp. But by gripping the lever it was automatically released from the wheel and enabled the rudder to be worked independently.

This type of control, consisting of a post with a wheel mounted on it, has now come into very general use. It is applied in various ways; the most common arrangement is that used on the Avro and other machines, in which a back and front movement of the post works the elevator, while twisting the wheel warps the wings, the rudder being worked from a foot rudder bar or pedals. A direct modification of this is used in the Deperdussin and Flanders machines, where the wheel, instead of being mounted on a post, is placed in the centre of a cross bar, which is in turn attached at its ends to two pivoting posts one at each side of the fuselage.

Another form of control closely allied to this is that used on the Bréguet and other machines, where there is the same vertical post and wheel, but where the post is universally jointed, so that it is capable of both the back and front movement for elevating, and also of a sideways movement for warping or rudder. The twisting of the wheel effects the other of these two functions. The Blackburn control works on the same lines, with the difference that the post is almost horizontal instead of vertical.

In another case, the Curtiss machine, we have the wheel used for elevating and steering in the same way, while the warp lever is attached to the pilot's back so that he works it by a sideways movement of his body.

The only other wheel control of any note is that of the Antoinette, wherein the pilot has a wheel on each side of him arranged parallel to the edge of the fuselage. One of these wheels works the elevator, and the other warps, the rudder being worked by a foot bar as mentioned above. This control needs a constant effort of memory, or, at any rate,

a long training, to remember which wing is being warped by a backwards or forwards movement of the warp wheel.

The other main class of control hand gear is that in which no moving wheels are employed, though, as in the case of the Blériot, a fixed wheel is sometimes attached to the top of the lever simply as being a convenient form of hand grip. Nearly all of these controls comprise a single lever capable of movement in two directions and a foot bar.

In the most common type a back and forth movement of the lever works the elevators, while a sideways movement warps the wings, the foot bar controlling the rudder; this is the control used on Farman, Blériot, Morane, and many other machines. There are a few, however, including the Nieuport, which reverse this procedure, using the lever for elevation and steering and warping with a foot bar.

There are, of course, various freak controls continually being brought forward, but I think the list above contains most of those which have been proved to be of use. It is practically impossible to say that any one of them is better than the rest, for in the case of hand gear more than any other part of the machine the question of the pilot's personal taste is of paramount importance.

Of course, on really well-designed machines where the controls need no effort for working them, the method of applying them is not very important, but, where, as is the case in most machines at the present day, the controls occasionally need all the pilot's strength, the hand gear must be so arranged as to allow of his using it. It is in the warp that this question usually arises, and there seems no doubt that it is easier to work this by a wheel than by moving a lever.

On the other hand it is stated that the lever is quicker, so that the question depends upon whether the machine for which the controls are being designed is likely to be most in need of force or quickness in controls. Personally my preference is for the Deperdussin-Flanders control, which has the advantage over the Avro-Bréguet type that in case of a fall the pilot is less likely to be injured by being thrown on to the control owing to the absence of a central post.

### Transmission Gear.

Transmission gear for aeroplane controlling purposes is exceptionally easy to arrange, yet somehow, and perhaps on account of this fact, most of the methods of transmission in use at the present day are lamentably bad. The first question is as to the choice of material.

It is on record that Fernandez, the Spaniard, who designed and flew a more or less successful small biplane as far back as 1909, met his death simply because when one of his elevator wires wore through he tied the ends together with a piece of string, which broke when he was about 150 ft. up.

Most designers of the present day would bring a libel action against anyone who should venture to suggest that their actions were comparable with that of Fernandez. But when one sees, as I have seen, one of the most important control wires on a machine made of piano steel wire and taken round a corner by the simple method of running it through a bent tube, so that whenever the control was used this piece of highly tempered steel was bent and straightened, one tends to feel pessimistic.

Practically speaking the transmission gear may be either of solid steel wire, stranded cable, or push and pull rods or tubes, and the corners may be circumnavigated by the use either of curved tubes, bell cranks, or pulleys.

The simplest method appears to be the use of a face of it, to be the use of push and pull rods with bell cranks at the corners and guides at intervals. In actual practice, of course, the rods will be hollow—tubes, in fact. This, while it saves duplication of the connections, involves difficulties in construction and in the matter of weight.

Stranded cable has the advantage of being extremely flexible, so that it can without injury be run round corners by the use of curved tubes or pulleys. On the other hand it is always subject to deterioration, because of the smaller size of the individual strands, and of the fact that water can easily reach the inner strands and be held there by capillary attraction, when rusting will inevitably take place unnoticed outside. If stranded cable is used it should always be exposed so that it can be continually under inspection.

Solid wires and steel tapes are much more durable than stranded cable, but are not quite so easy to get round corners.



# GREEN'S ENGINES for RELIABILITY.

**Mr. S. F. CODY'S Striking Endorsement.**

"Dear Sir,  
I have very great pleasure in speaking of the reliability of the 'Green Engine,' and I feel it only just on my part to mention that if I had trouble with my petrol tanks and oil sump, neither of these were due to engine defect, and my real opinion is that if the 'Green Engine' is supplied from without with fuel and oil, there is sufficient from within it to take you through."

Yours truly, S. F. CODY.

His performances prove that Mr. Cody's judgment is sound. Therefore comment is needless.

**Why don't YOU investigate now?**

**The Green Engine Co.,**

Sole Licences under Green's Motor Syndicate Ltd.,  
55, Berners Street, London, W.

Makers for the Patenteers: THE ASTER ENG. CO., LTD.



## £750

**READY TO FLY.**

## The "Flanders" Monoplane

(TWO OR THREE SEATS).

60-80 Green Engine ("Circuit of Britain" type).

65 m.p.h.r. (timed). [L. Howard Flanders, Brooklands, Weybridge].

## MULLINER

LONG ACRE, LONDON, &  
NORTHAMPTON, LTD.

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

**AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.**

**Sole Agents for NORMALE PROPELLERS**

The Most Efficient  
Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race, the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA.

TELEGRAMS: "AERO-RAFT," LONDON.

## 'Blackburn' Monoplanes & Propellers.

**TUITION.**

Mr. B. C. Hucks' double non-stop flight from Weston-Super-Mare, across Bristol Channel to Cardiff and back, was made on **BLACKBURN** monoplane fitted with **BLACKBURN** propeller.

'Phone: 2822 Central.

**The BLACKBURN AEROPLANE CO., Balm Road, LEEDS.**

Telegrams: "Propellers," Leeds.

## T. W. K. CLARKE & Co.,

**SPECIALISTS IN OXY-ACETYLENE  
WELDED WORK.**

**CLARKE PROPELLERS.**

**CLARKE LANDING WHEELS.**

**CLARKE ACCESSORIES.**



Send for our "FLIGHT FITTINGS" Catalogue.

Fully Illustrated : : : : By Post 3d.

Crown Works: **KINGSTON-ON-THAMES.**

## THE BENEY PROPELLER

**British Design :: ::  
British Manufacture**

AS USED ON THE "FLANDERS" MONOPLANE.

**ROBERT BENEY, 7, Carlisle Street, Oxford Street, London, W.**

## E. T. WILLOWS LTD.

STOCK  
DIRIGIBLES

"City of Cardiff" Type, to carry 4, £900 complete.

New Light 2-Passenger Model - - £370 "

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



As a matter of fact, as mentioned above, it is unfortunately a common practice to-day to run solid wire round pulleys or even through curved tubes. Having in mind the great tendency of high tension steel to fatigue, this practice to my mind is little short of criminal.

On the other hand, if bell cranks are used, as they should be where a bend is to be negotiated, the fastenings of these must be carefully attended to, and lock nuts or split pins put on their pivots.

Looking at the matter carefully, it seems to me that by far the soundest control transmission is that of solid high tension wire with bell cranks at the corners, the crank pivots being locked by pins, and the eyes in the wire being made carefully. This is so reliable that it can be fearlessly placed inside the construction, where it offers no resistance.

#### The Application.

This part of the subject, involving as it does the whole design of control planes, is really too large to be dealt with in small compass. All I can do is to point out a few of the more obvious considerations.

First, the only way to get variable work out of a control plane is by varying its angle. Lateral control, it is true, might be attained by variation of surface, but since surface variation is only effective when the surface is set at a fairly large angle of incidence, the only use for it in control planes is in the particular case of a heavily loaded front elevator. Variation

of velocity might be arranged by the use of a telescopic fuselage, but has the same disadvantage as above.

Now it is well known that every angle of incidence has its own most suitable camber, from which it follows that a control plane should be of variable camber. Also, it is obviously desirable that the use of the controls should not require force on the part of the pilot, so that all control planes, as far as possible, should be balanced, i.e., should move about their centres of pressure.

Again, since the double-surfaced plane, if properly designed, has been proved to offer less resistance than the single-surfaced, it would seem a matter of the purest common sense to build up control planes in this way, since, owing to the comparatively small amount of work done by them, it is important that their losses be as small as possible.

Therefore it appears that a control plane should be double-surfaced, and should be flexed about its centre of pressure. The present type of single-covered plane, partly fixed, but with unbalanced flaps at its rear edge, is about as bad as it can be, especially as it is usually worked by a lever with a fan of wires, which all offer great resistance.

The reason, I think, is to be found simply in the difficulty of designing a proper control plane. But I think it is rather a case of fright at a bogey, as it will be found that when squarely faced the matter is not really so difficult as it seems at first sight.

#### Single-Seater or Multi-Seater.

The French military trials are naturally giving rise to a great deal of controversy all over the world as to whether the military aeroplane of the future should be a single-seater or a multi-seater, or, in the more euphonious French phrase, monoplace or polyplace.

One of the best and most valuable contributions to the argument is that of M. Louis Bréguet, who says one must not condemn one or the other, each type corresponding to distinctly different needs. "Let us consider the matter from the military point of view," he continues. "For rapid reconnaissance within a comparatively small radius and over a well-defined field of action, such as in directing artillery fire, a single-seater would be most useful. It would seem that such a case would need machines which are very light, easily dismountable, so that they could be instantly placed on a wagon and so travel with the battery to which they were attached.

For reconnaissance work at a greater distance, to study the movements of army corps, one needs machines which are able to travel at least ten kilometres from their starting point. A single pilot cannot undertake the fatigue of driving and of making a precise and rapid observation at the same time. It is also absolutely necessary in order to avoid failure of memory that the observer should at once put down the result of his observations on paper, and in such a case a two-seater is necessary.

"One can imagine still greater reconnaissances when detachments of an army invade a country. Under such circumstances aeroplanes may be called upon to travel so far from their original starting point that they may have to camp out almost anywhere. Besides the pilot and the observer the presence of a mechanic is indispensable for the little cares which have to be given to the motor, adjustments which have to be tested, and generally for looking after the starting-up of the machine. Such a machine must be a three-seater. The mechanic himself might be a telegraphist and have the wireless telegraphy outfit to look after as well.

"So far we have only considered the aeroplane as a scout. If, as appears to be our fate, we have to study aeroplanes as weapons of offence, the number of passengers is increased by the officer-directing operations, by the crew in charge of bombs, explosives, or guns, and we arrive at an aerial cruiser which will be to the single-seated scout what the battleship is to the torpedo boat.

"In civilian application single-seaters and multi-seaters will each find a place. The single-seater will be the economical machine for short trips. The multi-seater will be the aeroplane for extended tours. It will be the machine for family trips and excursions.

"As regards its use for Colonial purposes, and here we can see great possibilities for our young industry, the multi-seater will be the only machine possible. I do not condemn the single-seater, but I foresee for the multi-seater a future still more interesting from the industrial point of view."

#### The Northampton Institute.

The Northampton Polytechnic Institute may fairly claim to be the first technical institute to start aeronautical engineering work as a part of the regular course of their evening classes. In 1909, shortly after the historic flight of M. Blériot across the Channel, Dr. Mullineux Walsley, Principal of the Institute, in conjunction with Mr. C. E. Larrard, A.M.I.C.E., M.I.M.E., the head of the Mechanical Engineering Department, inaugurated the first series. The interest aroused by this step and the good attendance of students obtained made an enlargement of the course necessary.

In the next session in 1910 the course was put under the charge of Mr. F. Handley Page, and the equipment of an aeronautical laboratory was laid out. The course for the new session, which commenced on Monday, September 25th, includes lecture, laboratory, workshop, and drawing office work, and there is both an ordinary as well as an advanced section.

Of the details of the lectures there is no need to give an extended account, as this is already scheduled in the prospectus of the institute, but the advanced portion calls for more detailed comment. In order better to deal with the needs of a specialised branch such as aeronautics, the advanced lectures are split up into a series of special subjects, commencing with six lectures on the Design of Aeroplane Supporting Surfaces, on Friday, October 13th, at 7.15 to 8.15 p.m., and continuing on succeeding Fridays at the same time.

The advanced laboratory work can be taken in conjunction with these lectures. A later series of lectures includes some on Propellers, on the Stability of an Aeroplane, and on the Practical Design of Aeronautical Apparatus.

The laboratory is one of the best equipped in this country. There is a large wind tunnel, 6 ft. by 6 ft., in section, and this is available for experimental work on planes and models in an artificial wind blast. The tunnel is all complete with the necessary fans, electrical driving and control gear, and has three delicate balances with which to make measurements. These have been specially designed for this wind tunnel.

There is also an experimental streamline apparatus, by means of which one can see the air flowing round a plane, and thus get a picture of what actually happens when an aeroplane is moving through the air. Amongst some of the other apparatus is a runway track for finding the speed at which certain planes fly when moving through the air, a piece of apparatus designed by the Mechanical Engineering Department of the Institute.

In the workshop part of the course a full-size monoplane is under construction, a 30 h.p. engine having been purchased, so that everything is now ready and complete to finish this off this session.

#### The Rolls Monument at Monmouth.

It was decided at Monmouth on Monday to invite Lord Raglan to unveil the statue to the late Hon. C. S. Rolls in Agincourt Square, Monmouth, on the 16th inst. The statue is the work of Sir Goscombe John, R.A., Lord and Lady Llangattock, Mr. Rolls's parents, live just outside Monmouth.



## The Week's Work.

## Monday, October 2nd.

BROOKLANDS.—Bristol school out early, Pizey making first trial, then taking Lieut. Harford, R.A., for first lesson, pupil showing himself to need little teaching. Lieut. Hooper from Salisbury School also up with Pizey. Major Benwell solus, doing several good straight flights, but, when landing, broke radius rod of wheels; at same time omitted to hold machine down, with result that it climbed to 10 ft. or so. The Major, with great presence of mind, switched on the engine and saved a pancake, but, on landing again, broken rod allowed wheels to displace and get mixed up with stay wires, so that chassis collapsed and damaged lower plane as well. Major Benwell projected forward, cut chin, and broke a couple of teeth against wire in front. Hard luck, after years of service in India, to be wounded even slightly in an aeroplane accident on the ground. However, results not serious. Pixton out on E.N.V.—Bristol with Harford as passenger. Capt. Harrison joined the school. Important day for Deperdussin School. Capt. Fulton, commanding the "Air Company," up for several circuits on two-seater with Lieut. Porte, R.N., and Lieut. Reynolds, one of the best Army flyers, up on same machine with Bell as pilot. Then Louis Coatalen, designer and driver of the twelve-hour record Sunbeam car, received his "baptism of the air" with Lieut. Porte. Told the writer afterwards that the experience was magnificent, but banking at the corners rather took him by surprise. Considering that Coatalen habitually takes his racing car round the banking of the track at a much steeper angle than anyone ever banks an aeroplane this is hard to explain. Probably deceived by apparent slowness and smooth running of the aeroplane. Coatalen has views on aero-engine design, and one wishes he would carry them out. His car engine ran for twelve hours at between 2,000 and 2,200 revs. per min., so there is some experience to back his belief that we shall in future use heavier engines and make up the difference by making planes more efficient. Capt. Richey also up as passenger with Bell. Walton—Edwards "Colossoplane" out with Blackburn at wheel, doing straight flights. Percival on Billing biplane flying splendidly; got up to 800 or 900 ft. right outside track, and finished with spiral *vol plané*. Percival distinctly deserves a trial on a machine with a modern engine. Avro School in full work. Sippe doing good circuits, Young doing straight flights, and Setti rolling, all on Avro biplane. Raynham later flying



The Flanders Monoplane going well in a stiff breeze on "Manville" Day at Brooklands.

high, and Noel out on the aged Avro-Farman. Longstaffe out on Howard-Wright-Green doing straight flights to test balance of newly assembled machine.

HENDON.—Barber out for the first time since his return from Paris on Valkyrie-Green, doing several good circuits. Machine then handed over to Capt. Loraine. Mrs. Stocks, of the Grahame-White School, flying very good circuits on school Farman. Driver, Slack, and Parr on Blériots flying circuits well at 45 to 50 ft. Tremlett, Prenselli, and Lieut. Low now beginning to fly straight lines, but not yet started right or left turns. Allen doing rolling practice, but not yet attempted to fly. Sacchi making short flights. In afternoon Gustav Hamel off to Bushey to tea. Landed on golf links and gave fine exhibition flight, dodging trees, etc.

THE PLAIN.—Jullerot took Mr. Stanley White, managing director of the Bristol Co., round the 5 kilometres course which has been laid out for speed tests, etc. Then took Mr. Harry Delacourte out over Fargo and Stonchenge, afterwards making two trial solos on Nos. 43 and 10. Busted gave Smith-Barry, very promising pupil, lessons in *vol plané*, following with a solo. Then up with Baron Roenne, well-known aeronautical enthusiast, several circuits. Pupil's solo flying followed, Lieuts. Cross and Stroker and Smith-Barry each flying twice and Mellersh once. Hotchkiss took Lang, of propeller fame, for a flight. Two-seater monoplane was out, Prier flying solus and then taking Baron Roenne, exhibiting a very fine turn of speed. In evening Busted started by taking Hooper as passenger as far as No. 2 pylon of the course. Jullerot took Baron Roenne for two circuits, and Prier flew single-seater monoplane for ten minutes. Smith-Barry took over No. 12 and flew solus, making very good landing at No. 4 pylon. Hotchkiss flying machine back to sheds. Day's work finished by Lieuts. Cross and Stroker each flying very good solos.

WATERLOO.—Hardman out on school machine rolling. Lifted somewhat and came down roughly, breaking propeller and damaging chassis.

PORTHOLME.—Moorhouse out on Blériot in morning doing four flights well outside aerodrome. In evening out again, doing five flights of twenty minutes each outside aerodrome



J. L. Longstaffe, the latest Howard-Wright pilot.



at 2,500 ft. 100 minutes in air means 100 miles covered on this machine.

**LANARK.**—Ideal weather continued throughout week gave school grand opportunity for flying, and more work got through during week than ever done since school opened. Two of pupils, Warren and Jackson, about ready to take brevets on Deperdussin, same machine which Ewen used to cross Firth of Forth. Fact of these two pupils joining at the same date and ready to take certificates together certainly shows methodical manner in which school is now able to turn out pilots. Another hangar is to be erected, and Barnwell, of Stirling, who won the £50 offered to first Scotsman to fly a mile, is bringing monoplane to school to continue experiments on decent ground. Neild still indulging in short flights, which keep getting longer every day, while Warren and Jackson are doing half circles.

#### Tuesday, October 3rd.

**BROOKLANDS.**—No one out. Weather impossible.

**THE PLAIN.**—Morning was very gusty, and after Gordon England had flown ten minutes with Jullerot as passenger further work abandoned till afternoon, when, in spite of gusty 20 m.p.h. wind, Busted, England, and Jullerot each made solos. In evening slight and short-lived calm, during which England took Dacre, a new pupil, for first passenger flight, and Busted took Lieut. Hooper. Jullerot followed, taking Eton Roenne for a fifteen minutes' flight up to 1,000 ft., where he found strong gusts prevented him going higher. He then went solo to make a quick climbing trial of new propeller, rising to 1,200 ft. in three and a-half miles.

**PORTHOLME.**—Moorhouse, starting at 9.30 a.m., arrived at Northampton Race Course, forty-five miles, in half an hour, with wind on quarter. Great reception by local population. Local papers very enthusiastic, and one either victim of misunderstanding or of Moorhouse's humour, for he is reported as saying, "Up to 10,000 ft. earth objects are plainly discernible, and one can even pick out a chicken"! After short stop left again for ancestral home at Spratton Grange. After lunch did several flights over Holdenby and Brixworth, and finally started for Huntingdon about 2.20, arriving at 3.5, having covered altogether over 100 miles in the day.

#### Wednesday, October 4th.

**BROOKLANDS.**—A great day. Finest flying up to date. In early morning Porte, with Bell as passenger, started for Farnborough on two-seater Deperdussin, but put back owing to bad wind. Pixton on all-British E.N.V.-Bristol out for test. Sippe, Setti, and Young out on Avro. Then nothing doing till 2.15 p.m., when Pixton out again, with Harford, for Manville and Brooklands Aggregate Prizes. Details of times given elsewhere. During afternoon, in spite of rain and strong wind, Pixton did another flight with Harford, and two more with Capt. Richey. Raynham on Avro, Noel on Avro-Farman, Blondeau on Blondeau-Farman, Spencer on Spencer biplane, Porte and Bell on Deperdussin, Percival on Billing, Kemp on Flanders, and Maurice Ducrocq, all flying in fine style. Flanders had bad luck, engine not being yet tuned up after overhaul. Machine refused to fly at all with French propeller which formerly pulled pilot and passenger as well. Changed this for a Beney, whereupon machine flew well enough to give everyone excellent impression, but not enough to

please Flanders, who knew engine was 100 r.p.m. short of proper speed. However, distinct score for Beney propeller. Late in evening Bell took up first woman passenger on Deperdussin, a Mrs. Cochrane, who was quite fascinated by machine's comfort. Proceedings finished by lamentable accident to Billing biplane. Percival, flying well, took up a Keith-Prowse man as passenger. Ran short of petrol over sewage farm, engine stopped, so attempted sharp turn and landing at same time. Owing to bad light and weight of passenger did not flatten out soon enough, and hit ground nose first, breaking front of machine and damaging planes. Percival hardly unhurt, thanks to Birdling Safety Belt, but passenger received horizontal bar of fuselage across diaphragm. However, quickly recovered, so no harm done except to machine, which now requires considerable repairs. Percival talks of giving up flying owing to cost of rebuilding machine, but it would be a pity to lose so genuinely brave and skilful a pilot. Longstaffe on Howard-Wright-Green out late, continuing tests.

**THE PLAIN.**—Wind fighting again order of day. Jullerot out on No. 43 tossed about in sickening manner and forced to retire from combat, wind gaining every minute and flying impossible rest of day.

#### Thursday, October 5th.

**BROOKLANDS.**—Lawrence, late of Bristol Salisbury School, arrived with Rev. R. J. Campbell, Pastor of City Temple, desirous of having a new experience. Pizey took up E.N.V.-Bristol, vice school machine under repair, but found leg-bars too long for him to reach rudder lever, being built for Pixton, so, after uncomfortable and athletic climb, handed over to lengthy Fleming, who took Mr. Campbell several circuits, much to his enjoyment. At Deperdussin School, Bell on two-seater doing circuits with Garne as passenger. Avro School out as usual, Sippe doing excellent circuits, Young straights, and Setti rolling. Howard-Wright-Green out morning and evening with Longstaffe doing circuits. Machine flying well.

**THE PLAIN.**—The wind had all its own way throughout the day. Not one calm moment. However, plenty doing in sheds.

**CHELTHAM.**—Fine flying by B. C. Hucks on Blackburn, starting from and landing in ridge and furrow field at Whaddon Farm. Ground described by Hucks as "rotten." As usual, people with £1,000 cars enjoying performance free outside. Longest flight of day, nineteen minutes.

**LANARK.**—After Warren had done some practising, landing from heights of 30 to 50 ft., Ewen took Deperdussin out and made five figures of eight at height of 400 ft. as sample of what is necessary for brevet test.

#### Friday, October 6th.

**BROOKLANDS.**—Important day for Deperdussins. Taxi at work again, Lieut. Wilkins, R.N., and Capt. Richey doing good straight flights. Then Lieut. Porte, R.N., with Bell as passenger, off on two-seater to Farnborough. Covered the fifteen miles in fourteen minutes with wind on quarter. On arrival did numerous test flights for Air Battalion officials, including six flights up and down a measured mile, with side wind. Officially timed speed worked out at an average of 57 m.p.h. Very good going for big passenger-carrier. Officials then desired climbing test, and, thinking Porte at 12 st. and Bell at 11 st. 12 lbs. were not fair samples of average passengers, put in 40 lbs. of sand bags as well. Apparently



How the Voisin Canard is landed. Note the central pair of wheels put on when close to shore.

little effect on machine, which climbed to 1,200 ft. in eight minutes. Altogether exceedingly fine performance for standard machine with 60 h.p. stationary engine. Rumoured purchase of Deperdussin by War Office quite justified as few machines able to beat this, only a pity the machine is not built in England, even if French designs are used. What are English capitalists thinking about to let themselves be left out of competition this way? We have the brains and the men to do the work. What is lacking is the money to employ them. Maurice Ducrocq out on biplane. Assistants busy in shed fitting Viale radial engine to Avro fuselage for test purposes. Bristols busy. Pizey out on rebuilt school machine with Mr. South as passenger, and then with Capt. Harrison. Fleming up with Lieut. Harford and then with Major Benwell, soon returned to work and showing hardly any sign of wounds. Pizey next out with Lieut. Harford. Avro School hard at work, Sippe, Setti, and Young all practising. Sippe in particular doing circuits in capital style and promising to become a worthy successor of Pixton and Raynham in handling the Avro-Green. Spencer up with his pupil, Ballard, flying excellently on own make machine. In evening considerable excitement caused by arrival of W. B. R. Moorhouse from Northampton on Blériot. Only a couple of weeks ago Moorhouse struggling with old Anzani-Blériot, now suddenly developed into cross-country flyer of first class. Seventy miles odd from Northampton to Brooklands, and all of forty-five miles from Huntingdon to Northampton in morning, before starting for Brooklands. Same machine on which Radley flew the Channel and Morison fell into it, so whole performance a credit to man and machine. Longstaffe on Howard-Wright-Green doing circuits in improved style. Machine showing distinct promise.

**THE PLAIN.**—Busted up for short trial, but wind still too aggressive for work. Calm later, and Pixton, after a solo, took up Dacre, after which Lieuts. Cross and Strover and Hooper and Lee each made solos. Prior followed with further tests of single-seater monoplane.

**PORTHOLME.**—Moorhouse started for Northampton again, arriving at Spraton for lunch. In afternoon flew to Brooklands, a trip about 120 miles in all.

**CHELTHAM.**—Hucks on Blackburn out at 12.45 p.m. over Prestbury Park and Coombe Hill to Gloucester and back, circling round city and doing journey in thirty-six minutes. Out again at 3.30 p.m. for twenty-nine minutes over Bishop's Cleeve and Morle Hill at maximum of 2,000 ft. Again out at 4.50 for five minutes. During next flight was caught in storm and came down on polo ground. Two false starts, one landing in cabbage field, before able to get back to shed.

#### Saturday, October 7th.

**BROOKLANDS.**—Bristols out early, but wind bad. Pizey did test flight, and then up with Major Benwell. Sippe, Setti, and Young out on Avro, but wind and rain stopped all afternoon flying till near dark, when Kemp came out to test Flanders with fresh adjustment to wings.

**HENDON.**—Difficulties between Chanter School and Hendon authorities having been settled the school got to work again. In the evening Chanter doing circuits and De Villiers and Dwyer out rolling.

**PORTHOLME.**—Moorhouse returned by car and took out Radley and Moorhouse monoplane of Blériot type. Machine flew absolutely perfectly at first attempt, no adjustments whatever required. Later Moorhouse did necessary flights for certificate, after which O. C. Morison did some trial flights and expressed himself extremely satisfied with it. Portholme generally promising. Several pupils in prospect and plenty to do in works with new machines and various repairs. Also other owners of machines negotiating for sheds.

**CHELTHAM.**—Blackburn monoplane with Hucks at helm out at 3.5 p.m. over Cleeve Hill at 500 ft., and Battledown. Again up at 3.40 to 1,000 ft. over Prestbury, when suddenly ran short of petrol and had to come down in a field. Got out of it by skillful flying and returned safely to shed, almost in dark. H. Higgins, The Aeroplane correspondent, says everyone much impressed, as Hucks is a good, consistent pilot with no liking for circus tricks; advertises machine he flies and not himself. Landings were grand and carried out with excellent judgment; if they had not been, chassis would have been carried away owing to bad ground.

**LANARK.**—Ewen away in afternoon on flight to Glasgow. Rising rapidly to 1,000 ft. he crossed over outskirts of Lanark, and, following Glasgow railway, disappeared in distance. After flying about eight miles, ran into bank of fog, which made it impossible to see any distance, so gave up attempt for time being and returned to aerodrome. Fine attempt. Country by no means ideal for landing at any time, and Ewen no light weight for 30 h.p. Anzani.

#### Sunday, October 8th.

**BROOKLANDS.**—The greatest day's flying ever seen at Brooklands. In early morning Lieut. Porte, R.N., with Lieut. Wilkins, R.N., as passenger, flew Deperdussin two-seater back from Farnborough. Then nothing doing till about 3.30 p.m., and from then till 6 p.m. machines out in flocks, no less than nineteen pilots flying. Longstaffe first to appear, on Howard-Wright-Green, flying well; towards dusk up at 1,100 ft., and nearly lost himself in mist over golf links. Noel and Young alternately on the ancient Avro-Farman flying well, the latter making good role *plans*, but has developed silly trick of flying low down over enclosures. Raynham on Avro-Green making a very pretty show, machine seeming to whisper its way along after roar of the big engines. Snowden-Smith on Blondeau-Farman up high with many passengers away across country. Blondeau also taking passengers. Mrs. Hewlett flying in excellent style. Farman made fifteen passenger flights on Bristol, taking up Major Benwell, Capt. Harrison, Capt. Allen, Lieut. Harford, Miss Gertrude Bacon (collecting more material for her autumn lecturing tour), R. W. A. Brewer (formerly manager for Grahame-White), and many others. Pizey, also on Bristol, up with G. H. Challenger (Bristol engineer), and several others. Gordon England, on a flying visit, also out on Bristol with passengers. Graham climbed alone on Bristol doing astonishing circuits, well out in middle of aerodrome. Appalling banked turns a few feet off ground, quick switchbacks that must test machine's construction to the limit, and only possible with safety on really sound work; in fact, Gilmour doing anything a bird could do. Certainly he is the cleverest British biplane flyer, and doubtful whether any better abroad. Kemp out on Flanders, but still some obscure trouble preventing machine from showing usual fine form. Bell with Gordon England on Deperdussin two-seater flying very prettily and steadily, England delighted with machine. Spencer with several passengers flying well, but still given to quite unnecessary habit of flying right along over heads of people in enclosure regardless of possible effect of shedding a cylinder or bursting a propeller. Gustav Hamel borrowed "Big Ben" Blériot from Universal Aviation Company and took up E. V. Sassoon as passenger. Old machine flying nicely still, but very slow and no spare lift, probably due to slack fabric on wings. Maurice Ducrocq carrying lady passenger well up outside aerodrome. Thrilling display by W. B. R. Moorhouse on cross-Channel Blériot. Passed for brevet at Huntingdon on Saturday and returned to Brooklands to celebrate it. Made two flights up to 800 or 1,000 ft., doing wonderful banked right and left turns high up. Really a wonderful flyer, quite of the class of Garros or Morane, but will inevitably smash himself if he jerks his machine off ground at angle he now affects. One engine stoppage or a sudden gust and he would come down tail first! Too good a man to lose, so hope he will stop it. Let him stick to legitimate flying and he will make a big name. Morison and Hamel, two of our best Blériot flyers, gave up the "staircase" ascent long ago. Pashley brought out Humber, but either engine or propeller wrong, so gave it up as hopeless. Finally Blackburn, on Walton-Edwards "Colossoplane," made straight flights up and down ground, the 100 h.p. Clerget making a noise like a battery of quickficers. Good to see perseverance rewarded, for many prophesied that machine never would fly. Still needs altering here and there, but has shown it can fly. Truly a great day. Fairly good crowd of spectators. People returning from holidays, and also beginning to know what is flying weather and what is not. Few more days like this should go far to popularise flying in this country. Altogether, including passengers, about fifty people flew in two hours without semblance of an accident.

**HENDON.**—Lieut. Porte, R.N., out on Grahame-White-Farman, doing circuits until dark, and flying well.

**FILLY.**—Good flights by Osley on Blackburn-Isaacson, doing circuits of bay in fine style.

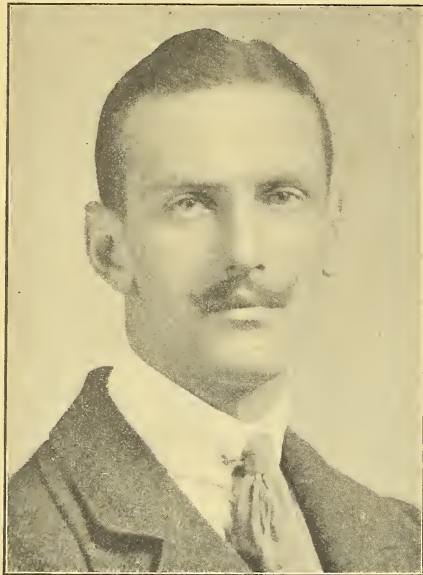
#### A Benefit Performance.

On Sunday last the aviators at Juvisy, and several from outside, gave a benefit performance for Frey, who was injured in the Paris-Rome-Turin race. Incidentally, Frey has since won the Italian Circuit, but they give him his benefit all the same. Verrept, on his Morane, went up to nearly 9,000 feet. Little Audenars did his quaint performances on his Demoiselle. Demozel and Divetain on Caudrons, de Pischoff on his own machine, Ladougue on the Goupy, and others, flew excellently, and Frey will be the gainer of a considerable sum. With such an example before us, why not give a benefit at Hendon or Brooklands to poor Hubert? The aviators would be willing enough if only the Royal Aero Club and either of the aerodrome proprietors would move.



**Blériot Activity.**

Mr. L. Seymour Metford has just passed with success for his aviator's certificate at the Blériot School of Aviation at Hendon. Mr. Metford has shown very remarkable ability during his tuition, and is the tenth pupil to go through the whole course of instruction at the Blériot School at Hendon without any breakages whatever. He is a member of the London Rifle Brigade, and is the first Territorial to obtain his brevet on a monoplane.



**L. Seymour Metford, the first Territorial monoplane pilot.**

Throughout the past summer, in spite of the bad weather, the Blériot School has been working quietly and steadily, with the result that it has turned out a number of well-trained steady flyers, who will presently make names for themselves. These pupils, after securing their certificates, do little exhibition flying, and so are but little heard of in the public Press, but none the less their work is of great value for the ultimate progress of aviation.

**From Grahame-White.**

From Mr. C. Grahame-White comes a friendly postcard thus:—

"Am sending this to you by first U.S.A. Aerial Mail. From Nassau Boulevard Aviation Ground, Long Island, to Mineola, only about two miles; somewhat easier than Hendon to Windsor, eh? Am doing very well over here so far, and have put up one or two world's records on the 70 h.p. Niépourt. Best of luck and continued success to you and THE AEROPLANE. CLAUDE GRAHAME-WHITE."

Thanks, G.-W., for good wishes, heartily reciprocated, and congratulations on successes in U.S.A. May you soon return to help wake things up in this country.

**The Navy League.**

Important correspondence has taken place between the Liverpool branch of the Navy League and the Lords Commissioners of the Admiralty asking whether the naval authorities would be prepared to accept an aeroplane from the citizens of Liverpool were a fund to be raised for this purpose.

The Admiralty have been pleased to accept the offer, subject to certain conditions, and a subscription list has been opened to raise the necessary £600 which will be required.

Subscriptions will be gratefully received by the Secretary, Liverpool Branch of the Navy League, Tower Buildings, Water Street, Liverpool.

**The Royal Aero Club.**

At the last meeting of the committee the following new members were elected:—Lieut. John Frederick Lecky and Lieut. Ernest James Strower.

- The following aviators' certificates were granted:—  
 142. Capt. Frederick William Richey (Bristol, Brooklands).  
 143. Capt. Steele Hutcheson (Bristol, Salisbury).  
 144. Lieut. C. L. N. Newall (Bristol, Salisbury).

Cheques amounting to £1,200, being a return payment to the competitors out of entry fees for the *Daily Mail* Circuit, were drawn, this being a payment of £40 to each entrant, the fee being £100 in the first place.

The question of establishing an international code of aeronautical signals and signs will be considered at the conference of the *Fédération Aéronautique Internationale* in Rome in November next, and the committee of the Royal Aero Club will welcome any suggestions from aviators, aeronauts, airship pilots, and others interested in the movement.

It is proposed to hold a meeting shortly to go thoroughly into the question, and suggestions are invited on the following points:—

Signals placed on the ground.

Communication between an aviator when flying and persons on the ground.

Aeronautical maps.

**A Sound Idea.**

To give the Boy Scouts a simplified aeronautical training, useful for scouting purposes, the Young Aerial League, formed some two years ago under the auspices of the Women's Aerial League, have submitted to Major-General Baden-Powell a scheme for the formation of a special branch of the League, to be called the Boy Scouts' Division.

The principal objects of the new branch would be:—  
 (a) To provide a new field of action in which the Boy Scouts' services would be of very great value, for, in case of invasion by an air fleet, with their special training they would be able to identify machines in flight, estimate their height, speed, direction, etc., and report to the right authorities; (b) to develop the inventiveness and powers of observation of the scouts; (c) to provide an elementary course which will be a sound foundation for those wishing afterwards to study the subject further, with a view to entering some branch of the new industry.

It is proposed that boy scouts should receive instruction in aerial navigation in its relation to scouting, as well as in the general principles of aeronautics, and it is hoped that by the method of instruction embodied in the scheme the boys will be able to report, concisely and accurately, full information concerning any aircraft flying over the country.

Quite a good idea, and one to which it is to be hoped proprietors of aerodromes will be willing to lend their assistance.

**The Thames and Aerial Navigation.**

The question of the danger arising from the navigation of air craft over the river was raised at the Thames Conservancy meeting on Monday, by the Finance and General Purposes Committee, who recommended that the Home Secretary be asked to issue an order under the provisions of the Aerial Navigation Act, 1911, prohibiting flights over the Thames on the occasion of regattas or at other times when numbers of persons are expected to congregate on the river and its banks. The recommendation was adopted without discussion.

**Australian Aerial Defence.**

At the present moment there are in England three Australians who have taken their pilot's certificates, namely, Captain Oswald Watt, Mr. Harry Busted, and Mr. Eric Harrison, all trained at the Bristol School on Salisbury Plain, and all exceedingly capable pilots. It is their intention when they return to Australia to set about forming the nucleus of an Army Air Battalion in connection with the Commonwealth Defence Organisation.

It will be remembered that Mr. Sydney Smith, of the Bristol Company, who is by now on his way home, has already done a great deal in Australia to stir up interest in aviation, and when these three native pilots return they should be able to give a very good account of themselves.

**The Three-Seater Height Record.**

On September 20th Lieut. Bier, who drove the enormous Etch in the Circuit of Britain, beat the height record for three-seaters by taking two passengers up to a height of 1,220 metres, or about 4,000 feet, on an Etch, thus beating Moineau's Bréguet record of 876 metres.



### Loco and the "May Fly."

The Loco Proofing Company in Glasgow write that THE AEROPLANE was mistaken in stating that the fabric used for the outer cover of the "May Fly" was supplied by another firm. As a matter of fact this fabric was supplied by the Loco Company. The firm says that they are confident that there is much business to be done in this fabric for dirigible balloons, and that they have at present under construction a new factory which will have twenty times the output of the present factory. They have recently patented a fabric which they intend to put on the market for use in the construction of aeroplanes, but it will not be ready for delivery in quantities for some months.

### Cellon as Raw Material.

Information to hand from the makers of Cellon notifies the fact that though Cellon dope is at present being made on the Continent, under British patents, pending the opening of factories in England, the Royal Aero Club will, however, pass it as raw material under Michelin Cup conditions.

### Railway Fares Extraordinary.

An aviator who recently had a machine sent to Scotland from France writes concerning the matter of transport, and his experience certainly should be instructive. The machine was sent to London, and, owing to the railway strike, could not be sent on by rail. Consequently it was sent thence to Scotland by boat, and, to his mingled surprise and horror, the charges worked out at £20 for packing, £42 for carriage from Central France to London, and £6 from London to Scotland.

There certainly seems something strange here, for if, as he points out, it takes £6 to do one half of the journey, why does it take £42 for the other half? Apart from this, £20 seems rather an excessive charge for a wooden case to hold a comparatively small monoplane, even admitting that the case was, as it certainly was, excellently made. Of course, railway charges are always excessive on anything which has not got an enormous industry behind it which can bring pressure to bear to reduce the fares; but, even so, £42 does seem excessive.

Aviators bringing machines from France in future will do well either to fly the machines home, *a la* Morison and Radley, or else have them sent by canal boat, which is just about as cheap as sea carriage by steamer.

### Concerning Vickers, Ltd.

Whatever one may say or think about the Barrow dirigible, its design, or its improbable utility, there is, at any rate, some satisfaction in knowing that the British taxpayer has got value for his money so far as the construction of the machine is concerned. Though the writer has not had the opportunity of personally inspecting the machine, he has it on the best authority that the workmanship throughout was magnificent, as anyone who knows the Vickers system of doing things will readily understand, and to anyone who has a real love for good work it seems a thousand pities that such workmanship should be wasted, through no fault whatever of those responsible for it. The same quality of work is evident throughout the Vickers system and its many ramifications, whether it be in ships, engines, motor-cars, dirigibles, or aeroplanes, and one has only to look into the detail work and finish of the new Vickers II. at Brooklands to see how vastly superior it is to the average machine in this way, as well as in its fundamental design. One would like to see the Vickers Company turn out a dirigible of reasonable size, for passenger work, like the smaller Zeppelins, entirely to their own designs and independent of the peculiar requirements of the Admiralty. One might then get something really worth having. At any rate, one can depend upon the new monoplanes worthily to uphold the prestige of the house of Vickers, and when once the machine now at Brooklands is properly tuned up we should see some really notable flights done on it.

### The Avro Offer.

One can readily understand to what extent specialised labour is required in the building of an aeroplane. It is not enough for a man to be a good workman; he must know and appreciate the fine points in aeroplane construction. This information is not learned in a day, and when a firm have been put to the expense of training a man they naturally do their best to keep him.

Recognising this, Messrs. A. V. Roe and Co. have boldly tackled the question of finding work for their men during the slack season, and the result is to be found in their offer

made in our advertising columns in this issue. A complete Avro biplane, fitted with 35 h.p. Green engine, is offered at the remarkable price of £400. As the regular price is £600, the importance of their offer is apparent, and as only twelve machines are to be made, there is no need to impress upon prospective aeroplane buyers the advisability of getting into touch with Messrs. Roe and Co. as soon as possible.

Those who have seen Pixton, Raynham, Lieut. Beattie, Conway-Jenkins, Sippe, and others flying the little Avro-Green, with and without passengers, know that it is a thoroughly practical machine for either aerodrome or cross-country work, if intelligently handled, and this offer is certainly a step towards bringing the aeroplane within reach of the man who has ability but not great wealth.

### THE VISITORS' LIST.

MR. A. E. GEORGE, just returned from a long trip in the United States and Italy in the interests of his motor-car business in the North of England, called on THE AEROPLANE to get in touch with the latest developments of aviation. The calls of Mr. George's business on his time have been so great that he has been compelled to give up flying for the last twelve months, and his biplane, on which he made a number of excellent flights in the Newcastle district, has been stored away. He thinks that it will probably be some time before he is able to take up flying again, but he remarked that he would be very unhappy if he thought that he was never to fly again. Consequently, we may hope to see him once more at the helm of an aeroplane. He certainly showed, when once he got his machine into proper working order, that he had the makings of an unusually fine flyer, and it is satisfactory to know that he is not to be permanently lost to the sport.

MR. R. F. MACFIE came in to say good-bye prior to his departure for the United States. Mr. MacFie was married on Wednesday of last week, his best man being Mr. J. H. Ledeboer, editor of that interesting scientific monthly *Aeronautics*. He and his bride have gone to Paris for their honeymoon, and sail for America at the end of this week. Mr. MacFie's many friends in this country will wish the pair a happy and prosperous trip, and hope ere long to see them back in this country accompanied by sufficient wealth to enable the bridegroom to carry on the many interesting experiments in aeroplane design and construction which he desires to make.

MR. A. V. ROE, exceedingly jubilant over Wednesday's results, announced that not only had three Avro pupils carried off first, second, and third prizes in the Brooklands aggregate flight competitions, but that his wife had presented him with a daughter on the same day. Congratulations.

LIEUT. H. H. HARFORD, R.A., Pixton's passenger for his first flights on Wednesday, said that the performance certainly looked very much worse than it felt. Pixton had the most perfect command of the machine the whole time, and apparently the only reason the flight looked so alarming was that he did not correct the pitching and tossing of the machine until it really needed it. Mr. Harford was full of praises for the mastery way in which Pixton saved what might have been a very nasty smash at the end of the second flight. They ran short of petrol at the Byfleet end of the ground, just after they had been carried by the wind right over the outer edge of the track, and when they started to glide down head to wind the wind speed was so high that they made very slow progress over the ground; in fact, the appearance was going to land on the track itself. However, they cleared the track and the ditch along the inner edge of it, and just managed to get across the rough ground where sundry excavations have been carried on recently, and by a carefully judged piece of manoeuvring, Pixton got the machine on the smooth ground with a few feet to spare. Mr. Harford's only complaint of his trip was the intense cold. He has now developed such a strong admiration for the Bristol teaching methods that he has definitely joined the Bristol School, but as he has got to return to India at the end of this month he will have all his work cut out to get his certificate before he leaves.

MR. B. C. HUCKS, paying a brief visit from Cheltenham, was most entertaining on the subject of his experiences during his successful tour in the West of England. It is pleasing to hear that Mr. Hucks has been able to pay his expenses and have a little left over, in spite of the fondness of the local nobility and gentry for what Mr. Hucks graphically describes as "hedge tickets." He is most enthusiastic over the behaviour of the Blackburn monoplane, which must by this time have covered a good many hundreds of miles in the course of its flights at Taunton, Burnham, Minehead, Cardiff, Newport, and Cheltenham.

He says that the machine is particularly stable in a wind, and that, although it is so large and relatively heavy, it gets over the ground very quickly and climbs wonderfully well. The only real mishap he has had with it was at Weston, when a wheel came off as he landed, and, rolling forward, got mixed up with the propeller, which it smashed. On another occasion, when he was landing, the machine rolled forward until it ran into a hedge, and so bent the leaning edge of the wing, without, however, doing any serious harm.

Altogether, he has flown on twenty-one days, generally under extremely adverse conditions both as regards ground and weather. He is fully convinced that the Blackburn chassis is the equal of anything in the world, or it could not possibly have stood the rough landing on the shocking grounds he had to use. Its last, and probably its most severe, test was on Friday last, when he had to come down in a cabbage farm near Cheltenham, and ploughed up many yards of cabbages with his skids.

As regards his wireless telephone experiences, Mr. Hucks is certain that Mr. Grindell-Matthews established communication with him, but the whistling of the air past the receivers was so great that he could not distinguish anything beyond a sound not attributable to the machine, and so, therefore, presumably due to the telephone. He is now sending the machine back to the Blackburn works to be re-covered and generally overhauled before starting a certain scheme he has in preparation for the winter; and he says that the planes, which were originally white, are now practically black with the signatures of half the rural population of the West Country. Mr. Hucks is to be highly congratulated not only on the successful issue of his tour, but on the really noteworthy work he has done in spreading a real enthusiasm for aviation in the West.

MR. J. L. LONGSTAFFE came to discuss possible courses for the Michelin speed prize flights, and probably by the time these lines appear he will have made his attempt. He prefers the idea of the Brooklands-Brighton-Winchester course, which, however, is open to the objection that it is very hilly and wooded. He is now handling the Howard-Wright-Green quite well, and with any luck should put up a really good show.

LEUT. WILFRED PARKE, R.N., who will be remembered as flying in a very daring style at Brooklands, and later as experimenting with the Sanders machine at Beccles, tells us that he has now made a friendly arrangement to fly various machines belonging to Mr. Grahame-White at Hendon. He is not, of course, in any way attached to the Hendon Aerodrome as a pilot, being on the active list of the Navy, but the proprietors of the aerodrome have, in a very sporting way, offered him the opportunity of keeping in practice. We can assure visitors to Hendon that if they should happen to be there when Mr. Parke is flying they will not lack entertainment.

MR. W. B. MOORHOUSE, resting after his performance at Brooklands on Sunday, gave a graphic account of his trip from Northampton on Friday last. Having gone over from Huntingdon to Northampton for lunch, he followed the Midland main line all the way to Hendon, and there started across country in the direction of Brooklands at about 3,000 feet. Almost immediately he ran into a fog, and, though he was seen distinctly at Richmond, he himself could see nothing of the ground until he sighted the reservoirs at Hampton. He said that as soon as he spotted them he made up his mind they must be either these reservoirs or the London Docks, but he had not the faintest idea which. He then came down to about 1,000 feet, and was able to see the river, which, being apparently too narrow for the Blackwall Reach, he diagnosed as being the Hampton Reach, and so picked up his bearings for Brooklands. Such an experience is trying a novice rather high, but Mr. Moorhouse undoubtedly has a natural gift for finding his way, and should make one of our very best cross-country flyers.

MR. LÉONARD WILLIAMSON, who has been fitting out such thoroughly adequate workshops at the Hendon Aerodrome, informed THE AEROPLANE that three whole sheds are to be devoted to the works department, one for machinery, one for wood working, plane covering, etc., and one as an erecting shop. Mr. Williamson has appointed a thoroughly competent works manager to take charge of this department, and hopes to have everything in thorough working order when Mr. Grahame-White returns from his American trip in the course of a few weeks. Certainly Mr. Williamson has already worked wonders in the organisation of this department.

M. NORBERT CHEREAU, M. Blériot's manager in this country, came in to talk over aeroplanes in general and Blériot machines in particular. It is of particular interest to note that the latest type racing Blériot, which was illustrated in THE AEROPLANE a week or so ago, is a distinct advance on

anything hitherto turned out. He states that with a 50 h.p. engine it is undoubtedly faster than recent machines with 70 h.p., and even faster than those in the Gordon Bennett race with 100 h.p. engines. M. Blériot also has an exceedingly fast two-seater coming out in which the seats are arranged side by side, and this, with a 50 h.p. engine, is considerably faster than the old type single-seater with the same engine. Mr. Gustav Hamel hopes to fly one of these over from France at an early date.

MR. J. HERBERT SPOTTISWOODE, just returned from Italy, gave a glowing account of the ability of the Italian military aviators. He said that the six officers who competed in the recent Italian Circuit were quite up to the best standard of professional flyers, and that when he left Italy six officers, under the command of Captain Piazza, who won the Italian Circuit, were under orders to take their machines to Tripoli for active aerial service.

### Cross-Country Model-Flying

From Mr. O. F. Noyes, of the Salisbury Aero Club, comes a post card, unfortunately not clear enough to reproduce, saying "This card has been conveyed by model aeroplane from the village of Stratford-sub-Castle, Salisbury, a distance of about two miles across country, and has been posted at the Durnford office. Model flown by O. F. Noyes. Witness, Flight 'E. N. Lear.' Thanks very much. Such a flight is quite as instructive as the full-sized 'aerial post,' and far less expensive. Cross-country model flights are really worth promoting among model Aero Clubs.

### Blackheath Aero Club.

The club has now secured private flying ground near Lee Green, and during past week fine flights were made. Large variety of models have been in evidence, as members are working out their own pet theories. Special meeting on Saturday (Oct. 14th) at 3 p.m., at "Kidbrooke" Ground, and impromptu events will be arranged. Afterwards a visit to new Lee Aerodrome, where club will meet in future, except when otherwise advised. On each Thursday there will be demonstrations of Illuminated Model Flying from 7.30 till 9 p.m. Further particulars on application to ARTHUR RIFFON (Hon. Sec.), 5, Limesford Road, Nunhead, S.E.

### The Manchester Model Aero Club.

Excellent flights again on Saturday, October 7th, at Traffo Aerodrome, at the model club meeting. Record flight for afternoon was 1,104 ft., but numerous other flights ranging between 600 ft. and 1,000 ft. One model flew for 42 secs., and 1 set to eight. Altogether very pleasant afternoon, and spectators quite enthusiastic. Another meeting will be held on Saturday, October 14th, at 2.30 p.m., at same place. Manufacturers and others interested in models will be particularly welcome by the officials of the club.—KENNETH KIRRA (Hon. Sec.), 40, Bignor Street, Chesham.

### Connisborough Aero Club.

The results of Saturday's meeting were: 1st, F. J. Wright, 630 ft., 37 secs.; 2nd, J. E. Dickinson, 270 ft., 20 secs.; and other competitors, G. N. Wilton, T. S. Wallis, S. Foster, and C. C. Allport. Big difference between the first and second competitor due to very bad luck of others. Allport's model smashed at the first attempt, and when repaired did 405 ft., but too late for distance test and too fast for duration. Mr. J. E. Greathhead and Mr. J. I. Webster were judges.

### Bristol Model Flying.

Model Aeroplane Meeting will be held on the Downs (Sea Walls) on Saturday, October 14th, at 3 p.m. sharp. Will competitors bring machines with them and, if possible, communicate with me beforehand?—R. V. TIVY, 3, Royal Road Crescent, Clifton, Bristol.

### Liverpool Model Aero Club.

At meeting on Saturday W. S. Ledward took first place with 21 secs. duration. A. G. Pugh second with 12 secs. People about becoming quite intelligently interested, actually craning to watch football, and new members are coming in. Want others, and I would ask those interested to attend General Meeting on the 29th, at 8.30, Back Road, Bootle, on the 20th inst. Committee Meeting on the 17th inst. at 7.30 p.m. Next Saturday (14th), unofficial flying meeting on Waterloo Shore at 3 p.m.—ALEX GRINDROD PUGH, Hon. Sec.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERLON, London.

Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
3 months, post free	—	s. d.	3 months, post free	—	s. d.
6	"	1 8	6	"	2 9
12	"	3 3	12	"	5 6
12	"	6 6	12	"	11 0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility can be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.



## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted ONLY—18 words **1/-**. 1d. per word after.

### PATENTS.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS.

THE AEROPLANE will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to THE AEROPLANE, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

### MACHINES.

FOR SALE, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

MACHINES.—"Avro" Biplane, new, with 30 H.P. Green £600; for passenger and cross country. The safest, simplest and handiest machine on the market.—A. V. ROE & Co., Brownsfield Mills, Manchester.

MILITARY type Farman, Gnome Engine, cases and spares for sale, price £650. Instalments accepted from responsible purchaser. Apply Box 334, THE AEROPLANE.

### ENGINES.

50-60 H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—THE AEROPLANE.

### PROPELLERS.

PROPELLERS.—"Avro" Propellers of proven efficiency 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co. Brownsfield Mills, Manchester.

### CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS

hold all Records, used by all leading Aviators. The Best, Sole British Agents, GEO. W. GOODCHILD and PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### TUITION.

TUITION, with or without limited liability, Blériot XI; personal instruction.—CHANTER, Aerodrome, Hendon.

£50. TUITION in flying till certificate is won. Avro pupils won Mauville, Brooklands aggregate, 1st, 2nd, 3rd; Brooklands, October 4th, 1st, 2nd, 3rd. The AVRO School for most thorough and all-round instruction. A. V. ROE AND Co., Brownsfield Mills, Manchester.

LANARK AERODROME, N.B. Tuition for R.A.E.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

BARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

### TUITION—Continued.

DEPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD., 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands

### EMPLOYMENT.

AERO and Mechanical Draughtsman shortly disengaged requires position, over 2 years' design and construction mono and bi-plane, can use tools, London and district preferred. Box 342, THE AEROPLANE.

### INVESTMENT.

£5,000 CAPITAL wanted for extending Profit-paying Aeronautical Business, making and selling Aeroplanes, and carrying on Flying School at which many Certificates have been won.—Box 340, THE AEROPLANE.

### MISCELLANEOUS.

PRACTICALLY NEW, the following are for Sale.—45 h.p., 8-cylinder Engine, tested, £90; Complete Bosch Dual Ignition, £7; 2 Propellers (Weiss and H.P.), each at £5; 1 Monoplane, beautifully made and tested, £45; 1 Steering Column and Control, £6; 1 Enclosed Universal Joint, £3; 1 Petrol and 1 Oil Tank, £3. Also Sundry Spares. Will sell separately, or accept offer for lot. GRATZ, LIMITED, 44-46, Whitfield Street, London, W.

HANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

### SALE AND EXCHANGE.

EVERYBODY'S CONVENIENCE SUITED. Genuine bargains. Send for weekly list of Aeroplanes and Engines. Cheapest on the market, sale or exchange.—WESTON HURLIN & Co., P.F. Building, 13, Milford Lane, Strand.

THIS week's bargains. Send for lists. 7ft. 6in. Propeller 4ft. pitch, £2 10s. new; 6ft. propeller, 4ft. pitch, £5 new; 6ft. propeller, 3ft. 6in. pitch, £5 or offer; 5ft. propeller, 3ft. pitch, £3 new; 6ft. propeller, 3ft. 6in. pitch, £3 10s. new. Several monoplanes from £10, less engine; 3 monoplanes with engine £60, £80, £150. WESTON HURLIN Co. (X Dept.), 13, Milford Lane, Strand.

### FLYING MODELS.

"MANN" MONOPLANE—The model that has been awarded twenty-three prizes. At Finchley on the 30th ult., in the event for directional control, the first and second prizes were awarded to Mr. Mann and Mr. Grimmer respectively, both flying "Mann" Monoplanes. *Verb. sap!* Look out for our exhibits at the Model Engineer Exhibition at the Horticultural Hall. They include a standard "Mann" half-miler, a "Mann" "get off the ground" model, a "Mann" winding machine, the famous "Mann" Monoplane that flew 84 miles in a fortnight, and a collection of photographs of the various record breakers constructed by Mr. Mann. "Mann" Monoplanes 15/-, parts and instructions for constructing same 5/-, "Mann" winders 5/-, "Mann" propellers 3/6 per pair, "Willis" quarter-inch strip rubber and "Willis" lubricant (both solely used on the "Mann" Monoplanes) 1/4 the dozen yards and 6d. per bottle respectively. All accessories and spare parts from WILLIS BROS., 14, Wellington Square, Hastings.

"M.S.C." MONOPLANE.—A genuine  $\frac{1}{2}$ -mile flyer complete with geared wind, post free 8s. 6d.—MURRAY STANGER Co., 20, Brograve Road, Tottenham, N.

MODEL PROPELLERS—Genuine CHAUVIERE—8in., 10in., and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, OCTOBER 12th, 1911

No. 19

## Three Fresh Triumphs — FOR — “BRISTOL” Aeroplanes

*BROOKLANDS, OCTOBER 4th.*

MANVILLE (passenger carrying) PRIZE won by  
a “BRISTOL” BIPLANE

BROOKLANDS AGGREGATE won by  
a “BRISTOL” BIPLANE

DAY’S AGGREGATE won by  
a “BRISTOL” BIPLANE

The “BRISTOL” Flying Schools  
at SALISBURY PLAIN and BROOKLANDS

are the finest and best equipped in the world  
and OBTAIN THE BEST RESULTS.

Last month 10 Pupils took Brevets.

Average Time of Tuition 3 weeks.

SPECIAL TERMS TO NAVY AND ARMY.

Write for Terms  
to—

The British & Colonial Aeroplane Co., Ltd.,  
FILTON, BRISTOL, ENGLAND.

"THE AEROPLANE," OCTOBER 19, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER

THURSDAY, OCTOBER 19th, 1911.

No. 20

## A British Prize-Winner at Work.

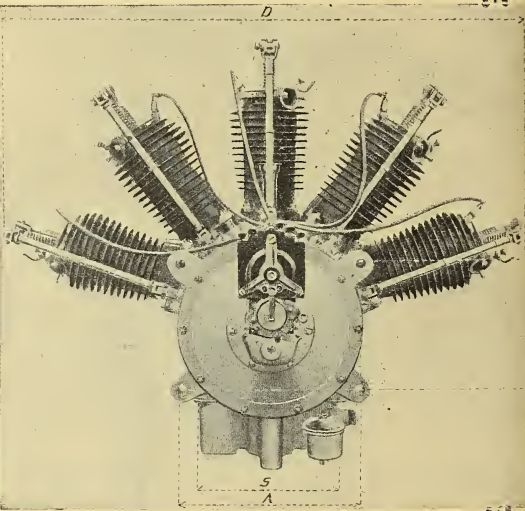
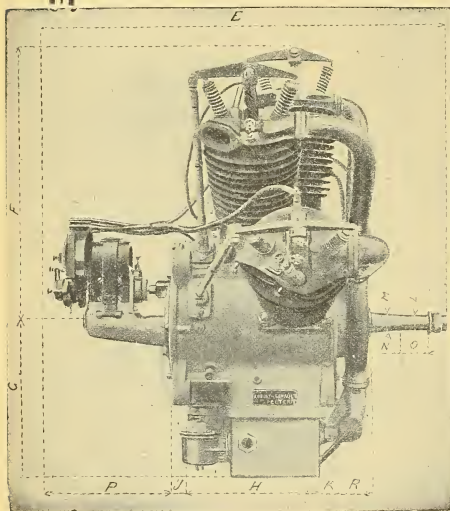


Mr. Claude Grahame-White on his 100 h.p. Nieuport, flying at the New York Aviation Meeting.  
Above: Taking a corner, Below: Getting off with a passenger.

SMITHSONIAN INSTITUTION OCT 27 1911



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40/50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

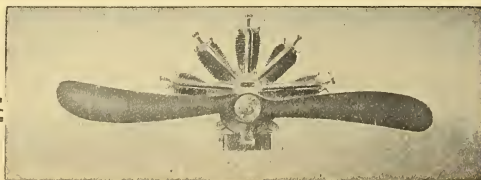
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS...	459	MILITARY AVIATION...	468
THE MICHELIN No 2...	462	NOTES FROM AMERICA...	469
THE FRENCH MILITARY TRIALS...	462	THE WEEK'S WORK...	471
AIR CURRENTS...	466	CORRESPONDENCE...	475
POSSERS FOR PILOTS...	467	THE VISITORS' LIST...	476

## Editorial Opinions.

## Flying as a Sport.

Mr. S. B. Bignold, of West Norwood, sends a cutting from *Le Journal* and comments on the fact that the aviation news takes its place along with the regular sporting news of the paper, and not only so, but is given the first place, preceding cycling, foot-racing, yachting, golf, rugby football, association football, touring notes, boxing, and pelota, which appear in that order. The only sport taking up more space is horse racing, to which a separate section of the paper is devoted. Mr. Bignold pertinently remarks "As there were no deaths to report, aviation was not mentioned in our own papers on that day."

Despite the booming to which aviation has been unfortunately subjected spasmodically during the last two years, the fact remains that the British Press as a whole—or at any rate the editorial employees, who, apparently, never stir out of their offices, as opposed to the reporters who occasionally see aeroplanes and realise what they can do—is not in the least interested in aviation. It is no secret in journalistic circles that such booming as has been done has only been undertaken by the editorial staffs of various papers under pressure from the proprietors, and that the regular members of the reporting staffs who have been turned on by the editors to "do" the various competitions have had quiet hints conveyed to them that as soon as the said competitions are over they will be well advised in their own interests not to waste their time thinking about aviation, but will devote themselves to more legitimate journalistic enterprises: which, being interpreted, presumably means worming out unsavoury details of triple murders, quadruple polygamies, and similar happenings which seem to the editorial intelligence of such calibre to be shaking the foundations of society.

Of course the real trouble lies in a fact which was graphically expressed to the writer by an exceedingly clever American who occupies a high position on the purely mechanical side of one of our biggest dailies. As he put it, "no newspaper has ever been really made; they have all just happened." According to his idea—and he is probably right—any daily paper could turn out very much better stuff than it does with half the staff if it were properly organised. Sub-editors and reporters—especially sub-editors—seem to be selected for their general all-round lack of knowledge, and except on matters of genuine national import, such as football and cricket, where a specialist is employed who is not a sub-editor, the sub-editor's ignorance, again to quote the American, "sticks out a mile high."

The editor-in-chief of the average paper seems

merely to concern himself with politics, beyond exercising a kind of general control, and in a general way deciding whether or not certain subjects are to be dealt with in the paper; but apparently he troubles very little whether they are dealt with accurately or not; and as the average editor is hardly ever seen outside his own particular sanctum he is naturally less in touch with what is really doing, apart from his own particular hobby, than anyone on the staff.

On the whole there is a great deal of truth in the saying that "nations get the newspapers they deserve," for undoubtedly the British public has not shown any undue haste to absorb any new idea—at any rate in the last two generations.

It is quite time that something was done either by the Royal Aero Club, or by the various aerodrome proprietors, to stop aviators from flying over the heads of the crowd in the enclosures.

To those who are thoroughly used to it and who, in a general way, are game to take risks, there is nothing particularly terrifying in an aeroplane passing overhead at a height of 100 ft. or so, and even at 40 or 50 ft. one knows that it is possible to dodge sideways if the machine should actually come down, but the ordinary public visiting aerodromes does not know these things, and is not used to dodging aeroplanes travelling at 40 or 50 miles an hour.

Quite apart from the chances of the machine coming down, there is also the ever-present danger of propellers bursting, or of cylinders blowing off, and aviators ought to remember that a cylinder thrown off by a rotary engine, or a splinter from a broken propeller, travels just about as fast as a bullet, or, at any rate, would be quite as deadly in its effect.

Even a minor mishap which would have no effect at all if it occurred in open country, or in the middle of an aerodrome, might have very serious effects if it happened while a machine was flying at a height of 40 or 50 ft., over a crowded enclosure with the sheds within 30 or 40 yards of its wings. Take, for instance, the case of a jammed rudder, which actually happened to one of our best flyers at Brooklands last week. Being well out in the ground he was able to bring the machine down quite comfortably by means of the ailerons, but if the same thing had happened close to the sheds, and he had been flying as low as some of the regular offenders do, the mere act of turning the machine out by means of the ailerons would probably have dropped it sufficiently to bring it in contact with the cars in the enclosure.

There is absolutely no excuse whatever for flying

over the heads of the crowd. It is not clever. It does not need any more nerve than does flying over grass. And there is no reason for it beyond the fact that the particular man who happens to be flying wants to direct attention to himself. As a matter of fact, it is purely a piece of silly conceit, and the sooner the average school pupil realises the fact that the best class aviators regard this particular performance as bad form, as the best of them do, the better it will be for the particular aerodrome on which he inflicts himself, because there is no doubt that quite a number of visitors are made to feel extremely uncomfortable, and are not in the least encouraged to visit that aerodrome again.

Readers of *THE AEROPLANE* can do the sport a real service if they will impress on all their friends at this season that so far from flying being over for the year the best flying is really just about to start.

The ordinary man who has not taken any practical interest in aviation is under the mistaken impression that the past summer, having been so hot and sunny, must, therefore, have been ideal for flying. Exactly the contrary is, however, the case, and it should be pointed out to those who are under such an impression that just as a fire makes a current of air up a chimney, so the sun beating down on bare exposed ground throws up a current of air which not only causes a current in itself, but causes other air to rush in from cooler areas to replace the air disappearing in upward currents, and also causes downward currents over neighbouring ground which is shaded by trees or mountains, and, therefore, is at a lower temperature.

The result of this is that in certain positions the air is boiling exactly as a saucepan boils, and flying is extremely dangerous. The outstanding example of this was the condition of the air at Brooklands at the start of the "Circuit of Britain," and yet thousands of people, one might almost say millions, thought what a perfect day it must have been for flying.

During the English summer we are accustomed in most years to have a number of still, grey days when the sky is covered by a thin layer of cloud which acts more or less as a blanket and keeps the temperature underneath practically even. Such a day is absolutely ideal for flying, but during the past summer we have not had one solitary day of that kind, at any rate in the South of England, and consequently there has not been a single day on which it has been possible to fly with comfort and without danger all day long.

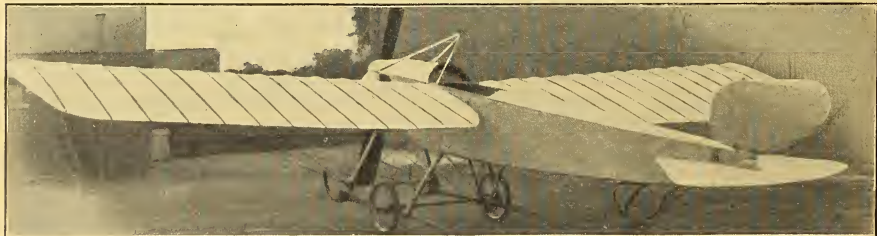
As a contrast one need only take the Sunday at the beginning of last week. To the ordinary man it did not look by any means a pleasant day so far as the London district was concerned; occasionally a feeble yellow sun managed to struggle through heavy clouds which looked like a thunder storm, and on the whole the day looked dark and dismal, but such breeze as there was blew perfectly steady, and owing to there being no sun all the remous were having a full day's rest as, of course, they should do on a Sunday. In fact, from a flying point of view, the day was absolutely perfect, except for the fact that it was rather hazy for cross-country flying, unless one knew the country exceedingly well. As a result there were eighteen aviators and an aviatress flying from soon after lunch until it was absolutely dark.

The beauty of the weather at this time of the year is that if it is moderately calm at lunch time it is fairly sure to be calm all the afternoon, for any wind that is going to get up nearly always gets up in the morning, and a further advantage is that if the wind happens to be in such a humour that it does happen to go down an hour or so before sunset that calm period comes at a reasonable time of the day instead of coming about 8 p.m., as it does in the summer. Further, if a day is really windy at this time of the year it blows properly, and even the most unobservant can have no doubt about it, for now a breeze strikes cold and un hospitable, instead of being as it was during the summer one's only relief from a slow process of cremation.

Looking through the records of last winter one finds that quite a lot of flying was done in December, despite the fact that there were not half as many pilots as there are now and considerably less than half the machines; and in January of this year flying took place at Brooklands practically every day and all day throughout the month.

Consequently, readers of *THE AEROPLANE*, especially including those gentlemen of the daily Press who find the paper so useful when composing dissertations on aviation, can assure their friends that the flying season is really starting instead of finishing, and that they can spend their week-ends at the various aerodromes with a considerable certainty of seeing some extremely good flying. Incidentally, it may be mentioned that both at Brooklands and Hendon it is now possible to obtain exceedingly good plain food.

At Brooklands particularly, owing to the number of different types of machines, one can spend a most interesting and educative Sunday, inspecting the sheds in the morning when practically no flying is done by common consent, lunching there in comfort and watching the flying in the afternoon.



The British and Colonial Co.'s new two-seater monoplane, which has been flying most successfully at Salisbury Plain. It follows exactly on the lines of the fast single-seater which has given such good results.

# GREEN'S ENGINES for RELIABILITY.

**Mr. S. F. CODY'S Striking Endorsement.**

"Dear Sir,

"I have very great pleasure in speaking of the reliability of the 'Green Engine,' and I feel it only just on my part to mention that if I had trouble with my petrol tanks and oil sump, neither of these were due to engine defect, and my real opinion is that if the 'Green Engine' is supplied from without with fuel and oil, there is sufficient from within it to take you through."

Yours truly, S. F. CODY.

His performances prove that Mr. Cody's judgment is sound. Therefore comment is needless.

**Why don't YOU investigate now?**

**The Green Engine Co.,**

Sole Licences under Green's Motor Syndicate Ltd.,  
65, BARNES STREET, LONDON, W.  
Makers for the Patentees: THE ASTER ENG. CO., LTD.



## BLERIOT MONOPLANES

"1911."

Paris—Rome: 1st—BLERIOT. 2nd—BLERIOT

Circuit of Europe: 1st—BLERIOT. 2nd—BLERIOT

Circuit of Great Britain: 1st—BLERIOT

Circuit of Belgium: 1st—BLERIOT

Moscow—St. Petersburg: 1st—BLERIOT

London—Brighton: 1st—BLERIOT

Hendon—Brooklands: 1st—BLERIOT

London to Paris in one flight (3 hours, 56 minutes) on  
**BLERIOT,**  
etc., etc.

CATALOGUE FREE ON APPLICATION.

Terms for tuition at our London School of Aviation sent on demand

**Tuition Free to all Buyers of Blériot Monoplanes.**

**All Correspondence to be sent to:**

**L. BLERIOT,** Sole Manufacturer,  
PARIS & LONDON

Head Office for the British Empire:

BELFAST  
CHAMBERS, 156, Regent St., London, W.

General Manager: NORBERT CHEREAU.

## THE "DEPERDUSSIN" MONOPLANE

"The Aerial Yacht."



Single Seater Complete from £450 and upwards.

Passenger Flights—Cross Country Journeys  
on our 2-Seater Deperdussin Monoplane  
from Brooklands Aerodrome.  
The Best Passenger Carrying Monoplane.

### AVIATION SCHOOL AT BROOKLANDS.

(Special terms to Army and Navy Officers.)

Full particulars from:

THE BRITISH DEPERDUSSIN AEROPLANE SYND., Ltd.,  
30, Regent Street, Piccadilly Circus, LONDON, S.W.  
Phone: 280 GERRARD. Wire: "MONOPEL, LONDON"

# VALKYRIE MONOPLANES.

THREE TYPES.

40—80 MILES AN HOUR.

FROM £280.

**ALL BRANCHES OF AERONAUTICAL ENGINEERING.**

ALL STANDARD TYPES OF AEROPLANES,

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

1. TUITION FREE TO PURCHASERS.

2. PARTICULARS ON REQUEST.

**THE AERONAUTICAL SYNDICATE, LTD.,**

ESTABLISHED MARCH, 1909

**COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.**

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.



## The Michelin No. 2 Prize.

S. F. Cody has had part of his reward at last. He has won the Michelin cross-country prize of £500 with his own-made biplane. It may be said that other all-British machines in the country are faster, which is true; more efficient, though that is doubtful; more naturally stable, which is unlikely; but the fact remains that Cody was ready when others were not, and Cody got round the course when others did not even start. His winning flight of 125 miles in 3 hrs. 9 mins., on September 11th, was the last of three excellent attempts on his part, so it was not a question of luck but of sheer good flying and efficiency of machine, for the flight was done in exceedingly windy weather.

He used the same machine, with the same Green engine, as that with which he covered the Circuit of Britain. His victory is in every way thoroughly deserved, for he is his own designer, from general design to the most minute detail. He is his own works manager, foreman, carpenter, and fitter, and

his own business manager and pilot, at one and the same time. It must be admitted that the other competitors had hard luck. The Flanders-Green monoplane, after being overhauled specially for this event, developed some obscure trouble, since put down to the wings warping owing to the sudden change of weather, which prevented it, in spite of the engine going better than ever, from lifting the necessary load of petrol for the 125-mile course to a height suitable for cross-country flying. The Universal Aviation Company's new Birding-A.B.C. monoplane could not be tuned up in time, owing to necessary alterations at the last moment. The Bristol-Isaacson monoplane was ready for several days before the time-limit expired, as was the Pashley Brothers' Humber and the Avro-Green, but the execrable weather of the past week absolutely prevented anyone from attempting a lengthy cross-country flight, in spite of the fact that there was plenty of aerodrome flying all over the country.

## The French Military Trials.

On Monday of last week practically no flying was done in the trials except tests by Prevost on the Deperdussin and Moineau on the Bréguet.

An explanation came in of Vidart's accident, the previous day on the Deperdussin. It appears that when he was about to make his second start from the field at Montcornet the officials insisted on his starting up without having any outside assistance in holding the machine while the engine picked up speed, with the result that the machine had not got proper steege way on it when it started, and so, not being under proper control, turned over in a rough place. The competition rules merely stated that it was *desirable* that machines should start without such assistance, but it was not obligatory, and did not in any way count in the competition. The officials, on the other hand, understood this condition as being obligatory, so, after all, the machine was needlessly wrecked.

The unfortunate soldier who was struck by the post in Prevost's landing the previous day died during the night.

On the 10th, between six and seven in the morning, several competitors went out for tests. Fischer did his second test on the Henry Farman, and Barra did his third test, both passing successfully. Level, on the Savary, went for his first test, but had to land at Neufchatel to make a repair.

Several unofficial flights were made. Védrières took two passengers on the Borel-Morane; Paulhan went up on his triplane, but did some slight damage on landing. Bréguet tested his 100 h.p. Canton-Unné engine, and Crombez made several flights with four or five passengers on the Sommer, this machine, however, not being in the competition.

On the 11th, Fischer, on the 100 h.p. Farman, passed his third test, as did Renaux on the 70 h.p. Maurice Farman. Moineau, on the Bréguet, passed his first test, these three being the only official tests of the day.

The Voisin-Canard was out carrying its full load in good style in the afternoon. Ladougue, on the Goupy, Weymann on the Nieuport, Fisher on the Farman, and Dubreuil on the Hanriot all made test flights. It is reported of Weymann that he drove his 100 h.p. Gnome from Mourmelon, where it was being repaired, to the starting point of the trials, in eight minutes, which, it is said, works out at a speed of 200 kms. (or about 120 miles) per hour. Michel Mahieu, the holder of the record for a flight with a passenger, also arrived, having toured round the North of France from Paris.

Another unfortunate accident happened in the afternoon, when one of the Deperdussin mechanics named Garde went to start up the 100 h.p. Clerget for the Count d'Hespel. The switch of the dual ignition was left in contact, and as soon as the mechanic pulled the propeller over the engine started, knocking him down and cutting off one of his legs, the man dying the following day. Some day constructors will realise the folly of the present method of starting by swinging the propeller. Only a fortnight ago an English mechanic was nearly killed in the same way, through the pilot switching on too soon before the man had time to stand clear.

The trials on the 12th were a little more satisfactory, though on the whole there is considerable dissatisfaction in France at the unreadiness of practically all the competitors, hardly any of the machines having done more than short test flights before their arrival at Reims, and some not even that.

Collix, on the Voisin-Canard, went for his second test, but, owing to the speed of the machine, over-ran the limit of the landing place, and his test was, therefore, declared

void. Weymann, on his Nieuport, passed his first tests satisfactorily, and it must be remembered that his machine is practically the same as that which he drove in the Gordon-Bennett, and, therefore, everything depended on the pilot's skill, as it is in no way designed for landing on rough ground. In the evening he made his second test flight satisfactorily. It should be noted that between times the machine had to be packed on a cart, brought back to Reims, re-assembled, and adjusted; both flights, with the intermediate work, being completed in seven hours. His was certainly the most meritorious official test up to that date, and, of course, his machine was very much faster than the others.

The same morning Gougenheim, on the 70 h.p. Farman, passed his first test, and Renaux, on the Maurice Farman, his third. During the day trial flights were made by Moineau on the Bréguet, Ladougue on the Goupy, and Vasseur on a 35 h.p. Hanriot. Dubreuil, on the Hanriot, also made some trials, and particularly impressed everyone with the speed with which his machine left the ground.

The chapter of accidents with which the trials began continued on this day. Level, on the Savary, having made several flights with passengers, went off alone to reconnoitre the route to Montcornet. After having done so he came back to the aerodrome, and came in over his shed at about 500 ft. He then started a sharp *vol plané*, which ended in his running into a telegraph post beside the railway lines. Level himself was picked up very badly injured, and the machine was simply a mass of debris. It was found that Level's spine was severely injured, and the doctors gave his case up as hopeless.

There was no flying on the 13th owing to the weather, and work was confined to tuning up the machines in the sheds. A rumour had got about that Level's accident was caused by a broken chain on his machine throwing one propeller out of action and allowing the other to turn the machine over, but a military committee which examined the machine found that all the transmission gear, even including the propellers, was intact after the fall. Accidents of the kind supposed are practically impossible on the Savary, because both propellers are driven by a single chain, and if the chain breaks both propellers stop.

Poor Level died on the 14th, remaining conscious to the last. He himself ascribed his accident to the fact that in descending he suddenly turned with his face to the sun, and was so blinded by it that he could not see the ground properly, and, consequently, when caught in a *renvoi*, he was unable to judge the descent of his machine. He made no allusion to the telegraph wires which actually caused the smash, so it is assumed that he did not see them.

On the 14th Gougenheim passed his second test, and Moineau started on the Bréguet, but was brought down by the fog 6 kms. from Montcornet. Several of the other competitors were doing unofficial trials, the Astras doing particularly well. In the afternoon Leblanc brought out the repaired Bliériot, damaged in Beaumont's smash, but when just leaving the ground he was caught by a gust, came down, ploughed up the ground with his left wing, and damaged the tail.

On the 15th, after a stormy morning, Weymann, on the Nieuport, went for his third test, and succeeded admirably, the Nieuport chassis, in spite of its critics, standing admirably the landing on the rough ground at Montcornet. Moineau, on the 100 h.p. Bréguet, made another start, but was brought down by engine failure some 15 kms. out. Bréguet took out

# Universal Puncture Stop

DOES NOT PERISH THE TYRE.  
DEFIES PUNCTURES.

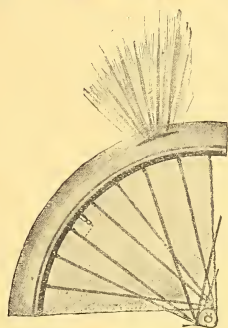
This could not happen. →

1 Box sufficient for 1 Cycle Tyre.

2 Boxes sufficient for 1 Motor Cycle  
or Aeroplane Tyre.

Full instructions with each box.

PRICE 1/6 PER TIN.



**The Universal Aviation Co., Ltd.,**  
166, Piccadilly, W.

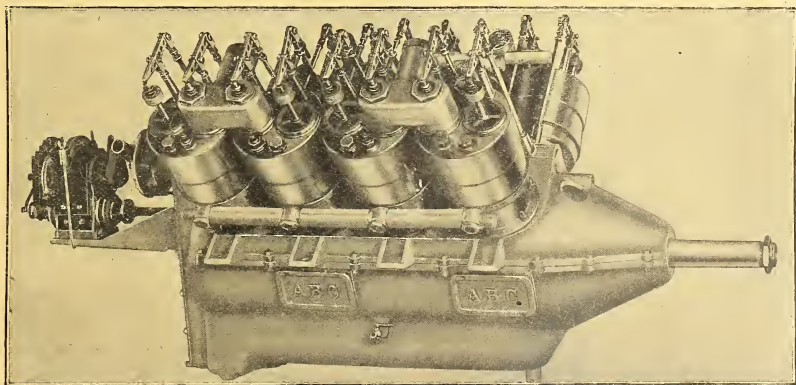
Telephone:  
3504 Mayfair.

Telegrams:  
"Birdling, London."

## A. B. C. AEROPLANE ENGINES

Manufactured by the All-British (Engine) Co., Ltd.

40-h.p. 4-Cyl. Vertical, £275; 80-h.p. 8-Cyl. "V" Type, £450.  
(A 120-h.p. 12-Cyl. "V" Type, £675). Under 3 lbs. per B.H.P.



London Agents: The Universal Aviation Co., Ltd., 166, Piccadilly, W.



the 120 h.p. Bréguet-Salmson for an unofficial test, and did very well with it. Gougenheim, rolling off to start on the Farman, shed a wheel, owing to a split-pin coming out, and smashed his chassis, the machine turning over nose first. He and his mechanic escaped unhurt.

The Military Committee met on this day to decide various disputed points in the rules, and these are interesting in view of possible British trials. It was decided that (a) Intermediate landings were forbidden during test flights. (b) The speed test could be started over again at the wish of the competitor. (c) The machine need not be weighed before and after the speed test. (d) If one of the landing tests had been cancelled, but the return by road carried out properly, the latter shall count, and only a fresh landing be required.

It was also decided that the big flights for the classification tests shall take place from November 4th onwards, and the starts shall be made according to lots drawn on November 2nd. In these tests each machine will carry two sealed barometers to check the height reached, and to show that the flight has been made without landing—a simple and ingenious dodge. The course will be from Reims to Amiens and back.

### Italian Notes.

In spite of the postponement (intentionally in his favour) of that grand affirmation of the capabilities of our military aviators which the Bologna-Venice-Rimini flight has been, poor Manissero, of whom Italians had great hopes, was unable to take part in the proceedings. Hence more money goes out of the country, though no one, of course, could be more welcome to it than Frey. The second prize went to Gaubert, who piloted a Wright, tailed, and of the normal 28 h.p., whose only trouble was a temporary overheating quickly put right.

Meanwhile, the wildest rumours of the Wright Brothers' latest find are being circulated. One day the invention is screwless, the next engineless, and I expect soon to hear that it is a noplane lifted by transmission of thought from a central thinking station.

Here, too, a postal pretence has been rather successfully perpetrated, chiefly as a self-advertisement.

Serious changes are altering rapidly the face of Italian aviation. Cagno has actually dropped flying to join the Lancia concern. This might mean a new birth, something light and startling, as it is known Lancia has it in mind.

Da Zara has followed Lieut. Savio's example and taken a wife, but without proposing to give up flying.

Rossi, on the Asteria, has just put up an Italian passenger record and, incidentally, almost broke the duration record as well. A pity Darbesio does not fit an Italian engine.

The Italian air fleet in full strength has been ordered to Tripoli. A Nieuport out spying, and forced to land for—let us say—petrol, in the hinterland, would be in an uncomfortable hornet's nest. However, Italy will have been the first of the European nations to use the aeroplane in real war.

T. S. HARVEY.

### Aerial Post Profits.

From semi-official sources, THE AEROPLANE is informed that the actual profits on the aerial post are approximately £3,000. It is to be hoped that before long the balance-sheet of the aerial post will be published in full.

### South African Aviation.

Many readers of THE AEROPLANE will remember the name of Mr. John Weston, a burgher of the former Orange River Free State, who took his certificate at Mourmelon late last year, and who remains the only South African pilot in South Africa. Mr. Weston has, during the last few months, been making a tour of South Africa with his Bristol biplane, and though the tour has not up to the present been a financial success, Mr. Weston has created a large amount of interest in South Africa, and should reap his reward before long.

Among the places visited by Mr. Weston were Kimberley, Johannesburg, and Lourenço Marques. The local papers such as the *Bloemfontein Post*, have given him quite a good deal of support, and have done their best to impress on their public that aviators need financial support in South Africa quite as much as they do in this country.

At Bloemfontein a passenger flight was put up to auction, and a Dr. Flockemann secured it for £13. The machine did not climb well with the passenger on board, and Mr. Weston ascribed the failure to the tenuity of the atmosphere at this altitude, having flown much better near the coast.

Mr. Weston is shortly opening an aviation ground near Pretoria. A site has already been obtained, and many military officers have expressed their intention of joining.

Writing to a friend in England, Mr. J. G. W. Gordon, of The *South African Motorist*, Johannesburg, to whom THE AEROPLANE is indebted for this information, states that Mr. Weston says that he had a lot of trouble at Lourenço Marques with the Customs officials, and also through the sea flooding the flying ground. However, the Bristol flew beautifully there, lifting a 14½ stone passenger without trouble. He says that financially, although he has not yet damaged the machine in any way, his balance sheet, after two months' working, is some £120 on the wrong side. He, like British aviators, is troubled by the fact that people seem quite satisfied to view the flights from outside the enclosures.

### Lieut. Watkins in Australia.

Paragraphs have appeared in various papers to the effect that Lieut. H. E. Watkins had had a bad accident with the Vickers machine in Australia. No details are to hand either from Mr. Watkins or Dr. Mawson, which undoubtedly would have been the case if anything serious had happened, and the only intimation that anything approaching an accident has occurred is a cable asking for a new propeller, which was received recently by Vickers, Ltd. If a propeller is needed, the inference is that the machine and pilot are in a condition to use it.

### A Swiss Aviator Killed.

Besides poor Level, a Swiss aviator named Schmidt was killed at Berne. After a good flight of thirty-one minutes he was making a second start when the machine came down from a height of 150 ft., afterwards catching fire, but it is not known whether Schmidt was killed by the fall or burnt.

### Military Aviation.

It is interesting to learn that there is one country in Europe even worse off than Great Britain in the matter of military aviation; that is Belgium, which has seven officer aviators, just as Great Britain has, but only owns two machines. Still, after all, Belgium is somewhat smaller than Great Britain, so there may be some excuse.



Mr. Gustav Hamel and the engineer La Fontaine inspecting the two-seater Blériot before starting from Hardelot,



**Howard T. Wright,**

110, HIGH STREET, MANCHESTER SQUARE, W.

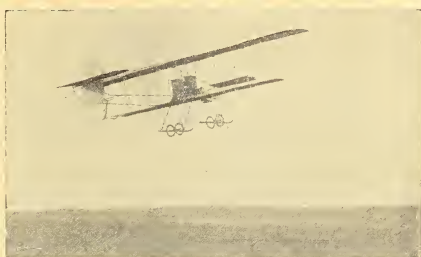
TELEPHONE—8574 GERRARD.

**WINNER OF DE FOREST PRIZE.**

... Eight Types ...

**Monoplanes**from 40 to 80  
miles per hour**Biplanes : :**from 36 to 50  
miles per hour

CATALOGUE ON APPLICATION.

**Special Offer**

OF

**TWELVE** 35 H.P.  
GREEN**'Avro' Biplanes**

AT

**£400**

each complete.

Usual Price **£600.**FOR FULL DETAILS SEE LAST  
WEEK'S ISSUE OR WRITE**A. V. ROE & Co.,**

The Aviators' Storehouse,

**BROWNSFIELD MILLS,****MANCHESTER.**

Telegrams—TRIPLANE.

Telephone—698 CENTRAL.

**£750** READY  
TO FLY

THE

**"Flanders" Monoplane**

(TWO OR THREE SEATS).

60-80 Green Engine

("Circuit of Britain" type)

65 m.p.h. (timed).

L. Howard Flanders, Brooklands, Weybridge

**An Education in Aviation**

can be obtained from the following books:—

**"The Art of Aviation,"** 10/6  
By R. W. A. BREWER ...**"Monoplanes and Biplanes,"** 12/6  
by GROVER LOENING ...**"The Aeronautical Classics,"** 1/- EACH  
Six numbers, by Sir GEORGE  
CAYLEY (1810), WENHAM (1840),  
and other early writers ...

By post from—

**THE AEROPLANE, 166, PICCADILLY.****MULLINER**LONG ACRE, LONDON, &  
NORTHAMPTON, LTD.

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

**AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.**Sole Agents for **NORMALE PROPELLERS**The Most Efficient  
Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race, the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA.

TELEGRAMS: "AEROCRAFT," LONDON.

**'Blackburn' Monoplanes & Propellers.****TUITION.**Mr. B. C. Hucks' double non-stop flight from Weston-Super-Mare, across Bristol Channel to Cardiff and back, was made on **BLACKBURN** monoplane fitted with **BLACKBURN** propeller.

'Phone: 2822 Central.

**The BLACKBURN AEROPLANE CO., Balm Road, LEEDS.**

ograms: "Propellers," Leeds.

## AIR CURRENTS.

## What is in the Air.

(Chats on the latest Aeronautical Novelties, reported by our Irresponsible Interviewer.)

"Just a little idea I thought might interest your people, Mr. Hott-Ayre," said the West End photographer, ushering me into his spacious atelier. "I saw a second-hand aeroplane offered for sale the other day, and it occurred to me that, with a nice landscape background, it would make a really useful and up-to-date piece of studio furniture. So here it is. You would call it a biplane, I think?" I assented, with some inward misgiving. I should not have liked to call it any kind of biplane I was on friendly terms with. "We had to cut a good bit off the ends, and also the curious little biplane which was fixed on in front, as it was of no use for our purpose, and, in fact, was very much in the way. You see the idea? Any lady or gentleman can just step in and have a high-class studio portrait taken, sitting in the machine, as if they were just off for a nice long voyage across country, and without any of the trouble or expense of really learning to fly. I am certain it will be a great success, and if you would like two or three dozen, in different positions—"

I complimented him highly on the idea, but excused myself; I had another appointment.

I found the sporting American millionaire in his private sitting-room at the Carlton, surrounded by all the refinements of modern civilisation, and smoking a cigar powerful enough to drive an all-steel machine at sixty miles an hour. He received me with the utmost cordiality.

"Yes, sir!" said he, hospitably passing me a silver-petted syphon and certain other of the said refinements. "We enthuse over aviation, some, in the United States! But in this country the sport needs popularising. So I mean to organise a right smart aerial circus at one of your big tracks, and just show you Britishers the way we have made flying a success on the other side.

I haven't got all the items planned out yet," he continued, beaming amiably, "but we shall start with an exhibition flight by one of the finest performers in the States, with the wings of his machine removed. Then the competitions. Something simple and tasteful first, say an event for small monoplanes, each to fly through some thirty-foot hoops covered with pretty coloured tissue paper. I call that a perfectly elegant notion. Then a House-fly-on-the-Ceiling race, all machines flying upside down and no safety belts allowed. We think nothing of a little thing like that in Ohio. But the event which will afford the greatest amount of genuine entertainment to the public is the Phoenix Altitude Competition—a handsome trophy to go to the aviator who succeeds in setting his machine on fire at the greatest elevation. And if that doesn't teach the crowd over here to take a real live interest in flying, you may call me a pie-faced mutt.

"Call in again next week and I'll have details of the Obstacle Race ready. And see here, my son, take some of these smiles with you. You'll get nothing else like them on this side!" And he insisted, with so much kindness, that I was obliged to pocket half-a-dozen of the cigars—with the private intention of presenting them to the editor at the first possible opportunity.

"Quite true," said the well-known aviator, with the boyish smile which has endeared him to all hearts, while I hastily jotted "One of Britain's brainiest birdmen" in my notebook. "It lets down just below the chassis when the machine is in flight. My own idea entirely, and I made it myself out of a lawn tennis net, the remains of a Highflyer's Home Exerciser, a couple of old bamboo spars, a set of curtain rings, and some hairpins I borrowed from a friend. Useful? Rather! Why, my 'bag' in just flying up to town this morning included no less than three brace of pheasants, besides a wood-pigeon and a stray box-kite, and, what I am most pleased with, a couple of patent chimney cowl and a really nice gift weathercock. I mean to decorate the roof of my shed with them, and in time I hope to get quite a good collection.

"Any difference to the machine? Very little; rather a steadying effect, if anything. Well, ta-ta, old man! Sorry to have to run away, but I promised to be back to afternoon tea."

And as he waved me a cheery good-bye, I hurriedly secured another fleeting inspiration—a really fine one this time: "Equally popular with the fair and the Plain."

M. L. E.

## The Worm Turns.

(With apologies to the Shade of the late Poet Laureate.)

Ask me no more, because I'd have you know  
My stock of tools is running rather low.  
Why don't you go and buy—Oh, hang it Brown,  
That saw you've "borrowed" cost me half a crown!

Ask me no more. My gloves and scarf and hat  
Cost several quid—and jolly cheap at that.  
But all the same, I strike, I'm bound to say,  
At buying new ones every other day.

Ask me no more. I am not quite insane,  
Why should I lend young Jones my aeroplane?  
What, his is busted—that's all very fine;  
But no excuse why he should bust up mine.

Ask me no more if you may cross the track  
In my new car—you never bring it back.  
To tramp on foot across the desert waste  
Is, strictly speaking, not at all my taste.

Ask me no more if pretty girls may come  
Inside my shed to hear the engine hum.  
I've had enough remarks re oil on clothes,  
And what they come for, goodness only knows.

Ask me no more, "When are you going aloft?"  
And "Did you find the sewage farm was soft?"  
Oh! Get outside! I've quite enough to do,  
And I've no use for gibberers like you.

D. M. H.

## Hints for Lady Passengers.

The Rectory, Risingwell.  
Tuesday.

My dearest Enid,

I am so pleased to hear that you and Cecily are taking an interest in aviation; you know we are all aeromanics here! Even your uncle is so much engrossed with his model aeroplane (his own design and construction!) that last Saturday he quite forgot all about preparing his sermon, and I am positive that yesterday afternoon I heard him say "Dear me" when the elastic broke.

I am sure you will enjoy your approaching passenger flights, and shall be very glad to give you any little hints I can from my own experiences. There is one thing you may find rather objectionable at first, and that is the odour. I now invariably take up a good-sized scent spray in my Dorothy bag, and find that a discriminating use of this makes a trip much more agreeable. Of course, one must be careful, as, if the pilot got a cloud of White Heliotrope in his eye at a critical moment, the result might be serious.

This reminds me that in the unlikely, but possible, event of anything going wrong, if you get nervous and feel you must cling to something, select some substantial portion of the aeroplane—of course, nothing connected with any of the works. The manly form of the pilot is not suitable as a means of support under these circumstances.

And lastly, dear Enid, let me impress upon you that your coiffure should be securely arranged and protected by suitable headgear, especially if you are going up in an engine-behind machine, or some shocking accident may happen. Tom came home the other night looking quite pale. It appears that when putting his Farman machine to bed after giving a number of passenger flights, he was horrified to find a beautiful curl, of *châtain foncé* hue, adhering to the propeller. He thought at first that some terrible tragedy must have taken place unobserved in the dusk, until, on reverently attempting to remove the relic, he found that the hairpin attachment which should have secured it to the owner's head was firmly embedded in the wood of the propeller blade. It gave him a turn he has not really got over yet.

Sincerely hoping that nothing so dreadful will happen to you or Cecily, and with much love to all,

I remain, your affectionate aunt,

MOLLY PLAYNE.

P.S.—I nearly forgot to say that Tom is taking care of the curl, and says that whoever it belongs to can have it on producing satisfactory evidence of ownership.

M. L. E.



## A Few Questions for Pilots.

One often hears it said that the men who know least about their machines, and why they behave in a certain way, are the men who fly most. Every pilot should have a thorough knowledge of the working of his machine, and undoubtedly he should be compelled to pass an examination on practical points connected with flying in general before he is granted a certificate.

By way of showing how this might be done, THE AEROPLANE has arranged with Mr. W. O. Manning, the designer of the Howard-Wright machines, to set a few test questions, based on his experience in tuning up the various different machines for which he has been responsible. The first batch of these is published below, and it is hoped that readers of the paper who have practical knowledge will amuse themselves in their spare evenings by answering them. Certificated aviators are particularly invited to do so.

Just to give those who answer some little reward for their time and trouble, a prize of £1 is. will be given to the sender of the best set of answers to each "examination paper" published. Only the winning set of answers will be published, and marks will be given for the manner of answer as well as for matter, the idea being to find out whether the "examinee" really understands the reason for doing what rule-of-thumb experience may have taught him to be the right thing to do.

Answers should be received at THE AEROPLANE, 166, Piccadilly, W., on or before October 28th, so there will be over a week in which to reply.

The following are the first set of questions:—

1. Why does an aeroplane fly?
2. Explain the expression "Pitch of a propeller."

### Boulogne to London on a Foggy Afternoon.

On Thursday, October 12th, Mr. Gustav Hamel, starting from Haredot, near Boulogne, on a new 70 h.p. Blériot two-seater, flew across the Channel, and was forced to land at Maidstone owing to fog. After a short stay there he went on, and, flying north, came to the Thames, where he turned to the left and followed the river westward right through London as far as Kew. Thence he followed the canal as far as Wembley, where he came down, again owing to fog. He left the machine there in charge of mechanics at night, intending to fly it back to Hendon next day, but was again stopped by bad weather.

Considering the haziness of the day the flight is an uncommonly good one, and proves still further Hamel's wonderful ability in finding his way across country.

His flight through London was absolutely justifiable, because, owing to the mist, the river was the only landmark which was thoroughly recognisable, for if he had attempted to fly

3. An aeroplane of the Farman type requires the right foot to be pressed against the rudder bar in order to fly in a straight line. Explain what incorrect adjustments may cause this fault, and how you would proceed to correct it.

4. An aeroplane of the Farman type requires the control lever to be pulled over slightly to the left (thereby depressing the right ailerons) in order to prevent it tilting while flying. Give the possible causes of this fault.

5. In an aeroplane of the Farman type: What is the effect on the flying of the machine of (1) too small an angle of incidence of the tail planes, (2) too large an angle of incidence on the tail planes.

6. Why does an aeroplane of the Farman type tend to drop the tail if the motor stops accidentally while flying?

7. In a monoplane of the Blériot type, does an accidental stoppage of the motor while flying cause the tail to drop? Give reasons for your answer.

8. What circumstances would, in your opinion, justify the trying of a propeller of larger pitch on any machine you may be flying?

9. Before starting on a flight it is necessary for a pilot to examine his machine in order to make certain that all is in order. Give your procedure for doing this on any machine you are acquainted with.

10. Why is it advisable to bank a machine when turning corners?

11. Why does it require more power to turn corners than to fly in a straight line?

12. You are flying across country without a compass, and have lost your bearings. What means are open to you by which you can obtain the approximate position of the points of the compass?

across the river and round the North of London he might easily have found himself over some of the thickly populated parts of the East End without knowing it.

### Will France Follow Suit?

A cutting from a French paper, kindly sent by a correspondent, shows that one of the promoters of the Hendon-Windsor aerial post suggests that he would be only too pleased to go over to Paris and help in the organisation of a similar scheme in aid of the victims of the explosion on the *Liberté*. In this connection it would be interesting to know what are the profits from the British aerial post, the balance sheet not yet having been published.

### French Army Regulations.

In future French officer-aviators will receive extra pay at the rate of 10 frs. per diem, and non-commissioned officers at the rate of 5 frs. per diem. Also all flying service counts as active service for promotion.



Mr. Gustav Hamel on the new 70 h.p. Blériot two-seater, about to start from Haredot.



### Military Aviation.

An aeroplane detachment under Captain Fulton, R.F.A., is to proceed to Salisbury Plain, on or about the 15th prox. There they will have two new machines, quite recently purchased by the War Office. A Nieuport monoplane has been delivered at Salisbury Plain, and it is to be flown by Lieut. Barrington-Kennett; also, a Bréguet has been delivered at S. Farnborough, to be flown by Lieut. Hynes, R.F.A., who has been receiving instruction on it. The machine was delivered on Wednesday of last week, and was ready, tuned up for a flight, on Thursday. On Friday a short flight was made by the French engineer who came over from France to supervise its erection, and the machine answered very well. The same evening he made an excellent flight to a height of about 1,000 ft.; the turning was perfect and the machine behaved splendidly. The engine, which is a Renault fitted with a four-bladed propeller, was running well. A splendid *vol plané* ended the flight, which lasted about an hour.

### The "Gamma" Experiment.

On Monday, the 2nd inst., a somewhat remarkable experiment was carried out with the Army airship *Gamma*, the object being to test the efficiency of the ripping panel, which is now fitted to military airships for use in case of emergency.

As is generally known, military dirigibles are likely to encounter sudden situations in which a rapid descent and deflation is necessary, either on account of the weather or an emergency arising in active service. It was, therefore, considered advisable that those in charge should have some knowledge as to what would happen when instant deflation was necessary; and to gain the knowledge the *Gamma* was deflated, under conditions as near an emergency landing as possible, without injury to the crew.

The *Gamma* is the larger of the two Army dirigibles, and is slightly larger at one end than the other. At the top of the large end the ripping panel, operated by a single pull of a cord, is situated.

Lieut. C. M. Waterlow, R.E., conducted the experiment before a number of officials of the Army Aircraft Factory and the non-commissioned officers and men of the Air Battalion.

The *Gamma* was towed from her shed, fully equipped for a Service flight, and was allowed to ascend to about 20 feet, held captive by a cable. When all were clear, the ripping cord was pulled (there was, of course, no one in the car), and the gas rushed out, the descent to the ground being rapid.

The chassis was instantly covered with a tangle of wires and the gas envelope. One end of the envelope still floated, but on pulling it down the gas inside also escaped, and the deflation was complete.

To the onlooker the heap of tangled wires, etc., looked a total wreck beyond hope of repair; but it was found; on investigation, that very little real damage was done, and certainly would not have taken more than a few hours to repair. No part of the engines, instruments, or chassis were broken, and could, with the repair of the gas envelope, have been ready for inflation again in a very short time. It is, however, reported that it is not intended to inflate the *Gamma* for a while.

### Naval Aviation.

It looks as if the Admiralty intends to do something serious in connection with aviation before long. Lieuts. Samson, Gregory, and Longmore, R.N., and Lieut. Gerrard, R.M.L.I., have been officially attached to H.M.S. *Actæon* at Sheerness, which means that they will continue to live at Eastchurch, and by inference one assumes that they will continue operations with aeroplanes. Capt. Godfrey-Paine, of the *Actæon*, has for a long time taken a very active interest in their training, and is himself a firm believer in the necessity of aeroplanes for the Navy. Admiral Prince Louis of Battenberg, commanding the station, has paid many visits to the Royal Aero Club aerodrome at Eastchurch, where these officers were trained by Mr. G. B. Cockburn, and where they have since continued to practise on the Short machines lent by Mr. Frank McClean. Prince Louis has himself made a trip on one of these machines, as has the Princess, as well as Prince and Princess Henry of Prussia, consequently naval aviation can rely on further influential support in high places.

Within the last few days a most significant step has been taken. The four officers mentioned above have been sent by the Admiralty to make a tour of the Continental aerodromes, so as to learn at first hand what is being done by the leaders of aeroplane fashions. They have been recently to Reims, where they have had the opportunity of witnessing the progress of the great French military trials, in which the latest products of the leading French manufacturers are being tested under most searching conditions prior to the distribution of orders amounting to about £100,000 by the French War Office. It is only to be hoped that the knowledge gained in this tour will enable these officers to persuade the Admiralty, now they have returned, to take up aeroplanes on an adequate scale.



OFFICERS, N.C.O.'S, AND MEN OF No. 1 AEROPLANE SECTION R.E. (AIR BATTALION R.E.)  
TAKEN AT SALISBURY PLAIN.

Back Row (from left to right) 1—Sprs. Bredding, Mullens, Geard, Roberts, Keszler, Osborne, Traylor, S. and C.S. McAllister, Spr. Evans, 2nd Row 1—Spr. Murray, Lee, Cpl. Jeffery, 2nd Cpl. Kidd, Cpl. Cullen, Staff-Sgt. Wilson, Cpl. Slade, Lee-Cpl. Brockbank, Lee-Cpl. Copeland, 3rd Row 1—Spr. Langton, Lieut. H. R. P. Reynolds, R.E., Lieut. D. Connor, R.F.A., Capt. D. B. Fulton, R.F.A., C. S. M. Ramsay, Front Row 1—Sprs. Garner and Greer.

## Notes from America.

An amusing, and at the same time useful, competition has been invented in the States, and should be extremely useful at British aviation grounds on days when ordinary flying is impossible.

Mr. T. O. M. Sopwith sends a post card, on one side of which appears the illustration reproduced herewith, and on the other side he says: "In the Quick Starting Competition at Boston the aviator and his mechanic stood the length of the wing away from the machine, and on the firing of a gun the man jumped into the machine and the first in the air won. We got the record in 9 secs." There is utility in this competition, for one can easily imagine circumstance in war-time in which a second wasted in starting would mean all the difference between a valuable scouting machine being captured by the enemy or getting clear away.

Purely as an aerodrome amusement it would offer plenty of fun on windy days. Of course, in a machine of the Wright type, as used by Mr. Sopwith, the aviator at any rate should be much quicker in getting into his seat than he would be in most machines used in this country; but probably most would depend on the ability of the engine to start up at the first pull over, and in this way the performance would encourage even more careful attention to the engines.

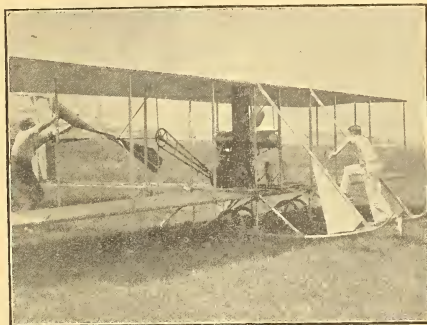
## The Deaths of Badger and Johnstone.

Mr. J. D. Sturrock, writing further concerning the Chicago meeting, says:—

"We had one very black day when both 'Billy' Badger and St. Croix Johnstone were killed within an hour of one another. Badger was a good little sportsman, and had only just got his brevet. It was obviously a case of taking undue risks, or 'stunting,' as his machine absolutely collapsed while he was doing a very steep switchback from about 200 feet.

"Johnstone's death was rather difficult to explain. He did a steep *vol plané* on to the water of the lake, and some who were watching him say his wings collapsed. He was flying an American-built monoplane. He was found sitting in the pilot's seat, quite dead, and undoubtedly the actual cause of death was a piece of glass from his goggles being driven into his brain. Several people had fallen in the water previously without any serious results beyond damage to the machines.

"Sopwith flew his repaired 70 h.p. Blériot wonderfully well, especially as he had had practically no practice on it



Mr. T. O. M. Sopwith boarding his machine in a hurry

before the meet, as it only arrived from France a few days before Chicago. As you have probably heard, he 'cleaned up' the largest amount of prize money—nearly \$15,000. He won \$3,000 on the American Wright for an hour's flight with two passengers, and also won all the cross-country events on his Blériot by clever flying, as his machine, being a two-seater, with touring wings, was really slower than the other racing 70 h.p. and the Moranes.

"Boston was not on so big a scale as last year, and the prizes were all very much smaller.

"Grahame-White flew his Nieuport very well, and, of course, won all the speed events, as the difference in speed was very marked. Tommy won about \$7,000 at Boston.

"We had a very unlucky experience at Brighton Reach one Sunday, where Sopwith and Grahame-White were giving exhibition flights. Tommy was flying over the water with Lee Hammond as a passenger, when the engine of his Wright machine stopped and let him down in the water, and the machine completely broke up, the only thing saved being the engine.



Mr. T. O. M. Sopwith flying his Blériot two-seater over Lake Michigan at the Chicago Meeting.



"I hope you are still going strong with your paper, which we both look forward to every week, and we wish you every success."

#### From New York.

Sending the postcard of himself and his machine which is reproduced herewith, Mr. Claude Grahame-White says: "Am taking this in the 'Baby' for the first aerial post in the U.S.A. All going strong over here. So grieved to hear of poor Cammell's death and Hubert's accident, also Nieuport's. Best wishes.—C. Grahame-White." Miss Grahame-White, who has just returned from the States, has kindly sent *THE AEROPLANE*, via Mr. Gates, of the Hendon Aerodrome, the two excellent photographs of her brother flying his Nieuport which appear as a frontispiece this week.

#### A Desperate Experiment.

Quite recently the writer was arguing with Mr. W. B. R. Moorhouse about the danger of getting off the ground as he does at a terrifically steep angle, and pointed out that if his engine stopped or the machine was caught in a gust before he flattened the machine out (which he usually does at about a height of 40 ft. or so), the machine would drop back on its tail, and he would have a very bad smash. Mr. Moorhouse agreed that that was probably so, but wished for further proof.

Consequently, one day early last week, without saying anything to anybody of his intentions, he took his Blériot out at Brooklands, climbed in the ordinary way to about 200 ft., then suddenly shot the nose of the machine up till it was nearly vertical, and switched off. The machine, still with a considerable amount of forward way on it, stopped rising, then dropped for some feet in the attitude in which it found itself when he switched off, and then the weight in the front of the machine asserted itself, and it pancaked for a short distance, after which it picked up its proper gliding angle, and he was able to switch on and continue flying.

The experiment was an absolutely desperate one for any man to make, but it certainly proves two things. First, that if a properly designed machine gets into a tail-down position, and the engine stops at the same moment, it will recover its proper gliding angle, always provided that there is sufficient distance below it to allow for the preliminary drop; and, secondly, that that particular style of get-off is absolutely dangerous on any machine, because the impetus of the machine at the first jump is not sufficient to carry it to a safe height if the engine should stop just as it leaves the ground. It is doubtful whether Mr. Moorhouse was justified in making the experiment, because he himself is a valuable recruit to our list of practical aviators. Nevertheless, he has the satisfaction of knowing that he has proved something which had to be proved sooner or later.

#### The Royal Aero Club.

At the last meeting of the committee the following new members were elected: Lieut. Kenneth Mason, R.E., and Lieut. Charles Benjamin Wilson.

The aviator's certificate was granted to (145) Lieut. E. J. Strover (Bristol, Salisbury).

The competition for the prize of £500 offered by Mr. E. Manville closed on Wednesday, October 4th, and the prize was unanimously awarded to Mr. C. H. Pixton. The recorded flights of Mr. Pixton at Brooklands were as follows:—

May 6th, 1911	...	31 mins.	...	Avro biplane.
May 20th, 1911	...	49 "	...	Avro biplane.
June 24th, 1911	...	31 "	...	Bristol biplane.
July 15th, 1911	...	1 hr. 16 "	...	Bristol biplane.
October 4th, 1911	...	2 hrs. 9 "	...	Bristol biplane.

The following are the specifications relating to the machines used by Mr. Pixton: Avro biplane.—Motor, 30 h.p. Green; carburettor, Trier and Martin; magneto, British Bosch; sparking-plugs, Lodge; propeller, Avro. Bristol biplane.—Motor, 60 h.p. E.N.V.; carburettor, White and Poppe; magneto, British Bosch; sparking-plugs, Lodge and Gnat; propeller, Bristol.

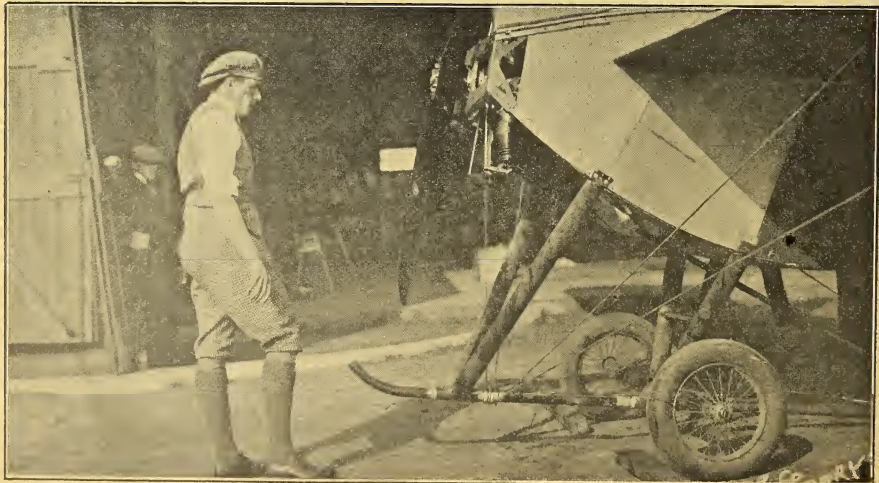
Mr. S. F. Cody made three flights in this competition, making a total aggregate of 3 hrs. 16 mins., using the Cody biplane fitted with a 60 h.p. Green, Zenith carburettor, British Bosch magneto, Pyramid sparking-plugs, and Cody propeller.

The following notice has been issued to all aviators: "The Home Office has written to the Royal Aero Club with regard to the interruption caused to Divine Service by flights on Sundays, and the committee therefore appeals to all aviators to refrain from making any flights over or near churches on that day."

The annual conference will be held at Rome, commencing November 1st, 1911, and the following delegates will represent the Royal Aero Club: Mr. R. W. Wallace, K.C. (chairman), Capt. Bertram Dickson, Mr. Frank K. McClean, Mr. Mervyn O'Gorman, Mr. A. Mortimer Singer, and H. E. Perrin (Sec.).

Intending competitors are again reminded that the competition for the British Empire Michelin Cup (£500) closes on October 31st. The minimum distance to be covered in order to qualify for this prize is 250 miles. This prize can be competed for on any recognised flying ground. Entries must be sent to the Royal Aero Club, 166, Piccadilly, W., from whom full rules can be obtained. The Brighton-Shoreham Aerodrome has deposited with the Royal Aero Club the sum of £50, to be awarded to the competitor who makes the longest flight (not being less than 250 miles) in the above competition at the Brighton-Shoreham Aerodrome.

Mr. J. L. Longstaffe has kindly presented four mounted heads of Indian game to the club.—H. E. PERRIN (Sec.)



Mr. Claude Grahame-White, who always tunes up his own machines, at work on his 100-h.p. Nieuport.



## The Week's Work.

## Monday, October 9th.

BROOKLANDS.—Longstaffe out in morning on Howard-Wright-Green, and again in evening. Engine exceptionally good, giving machine 250 r.p.m. more than needed for flying, about record excess power for all-British machine. Kemp out on Flanders-Green. Obscure trouble still not located. Engine tuned up and giving 150 r.p.m. more than ever before, so evidently not lack of power. Only possible explanation seems to be warping of wing structure, owing to change in weather, upsetting camber of wings. New wings in hand, but cannot be finished in time for cross-country Michelin competition. Everyone full of sympathy for Flanders and his keen and willing assistants. Spencer out, flying well as usual. In evening Ducrocq up also. Bristol out early. Pizey up with Lieutenant Harford, teaching him to land. Then with Captain Harrison, latter taking controls and improving rapidly. Next with Major Benwell, and again with Harford, pupil taking control. Then Harrison again. Later Benwell rolling and made good, straight flight, Harford following with straight flight also. Rest of morning Benwell and Harford doing numerous straight flights alternately. In evening same hard and regular work going on. Lieut. F. E. T. Hewlett, R.N., taking first lesson on Blondeau-Farman, made straight flights in good style after few minutes' rolling practice. Moorhouse, on Blériot, flying high and doing extraordinary turns and dives. Incidentally, took machine up nearly vertically, and switched off to see what would happen. Result: A pancake, and cleverly manoeuvred dive.

THE PLAIN.—Terrific gale blowing all day. Flying impossible.

LANARK.—Warren out on Blériot, making complete circles for first time at about 50 ft. Kept machine very steady and landed faultlessly every time. Afterwards tried a figure eight turn, but did not complete it on account of the wind springing up.

## Tuesday, October 10th.

BROOKLANDS.—Fashley out early on Humber, doing test flights. Kemp still testing various adjustments on Flanders in hopes of getting her to carry necessary load. Spencer out practising with Ballard. Ducrocq flying outside track, and Longstaffe training on Howard-Wright-Green for Long Distance Michelin, having found no opportunity to practise across country for other prize. Deperdussin school busy. Garne, on brevét machine, did first circuit in very good style. Chattaway and Captain Richey doing straight flights on same; Lieutenant Wilkins and Sabelli on taxi doing straights, and Baldwin, a new pupil, making excellent first attempts, also on taxi. Bell, with Sabelli as passenger, doing figures of eight on two-seater, then Pizey, of Bristol Company, given a friendly passenger trip by Lieut. Porte, and later Bell up as passenger with

Porte. In evening Sabelli rolling and Richey doing straights on brevét machine, the latter damaging chassis slightly in landing. Pizey, on Bristol, out in morning with Captain Harrison and Lieut. Harford, and latter doing straight flights till stopped by wind.

THE PLAIN.—The wind no better, and abandoned for morning. In evening, after ascent to test conditions, solo flying and school work was tackled in earnest. All Bristol pupils at work.

HENDON.—Mr. Barber brought new *Valkyrie* 11 off stocks in evening and made two circuits of aerodrome. Initial test unsatisfactory, as engine not pulling well. Hopkins on Chanter School Blériot out rolling in evening.

BELFAST.—Reappearance of Ferguson monoplane at Newtownards, several flights by Harry Ferguson, now recovered from operation on throat; flights being photographed by cinematograph man. Afterwards Ferguson took up his partner Williams for a flight, and then took up a lady passenger, weighing something over twelve stone, machine lifting splendidly. Later, Ferguson made solo flight across top of Strangford Lough, from the Portaferry Road to the Comber Road; 35 h.p. J.A.P. pulling splendidly, and doing quite well with very old type Clarke propeller, flying at about 50 m.p.h.

FILEY.—H. Scott, who recently joined Blackburn Filey School, made first trials alone. Out doing useful rolling practice for about  $3\frac{1}{2}$  hours continuously. Put in very good day's work, at termination of which he could keep a straight course at full speed with tail well up.

## Wednesday, October 11th.

BROOKLANDS.—First appearance of *Vickers II.*, E. V. B. Fisher flying five or six circuits in excellent style, and very pleased with way machine handled. Machine generally admired for handsome appearance, and engine evidently giving ample power. Pashley, on Humber, still testing, but unable to get a good lift. Deperdussin out, but too windy for circuits by pupils. Garne, Chattaway, and Captain Richey doing good straight flights on brevét machine. Wilkins, Sabelli, and Baldwin practising on taxi. Lieut. Hewlett, R.N., and Graham Wood practising on Blondeau-Farman, latter showing marked improvement and knowledge of ground. Mrs. Hewlett flying circuits in good style.

HENDON.—Hopkins, of Chanter School, rolling on Blériot. Nieupert type machine nearing completion, and promises to be useful mount.

HUNTINGDON.—Moorhouse, leaving Brooklands at 4 p.m., lost himself in the mist, reached Harrow, and made three circuits of the town, then on to Bushey, making another three circuits, thence followed Midland line to Hatfield, and, picking up Great Northern, followed it to Biggleswade, where he was again lost in fog. Sighting another railway line, and thinking it to be the Great Northern, he followed what proved to be the London and North-Western to Cambridge, there



Mr. W. B. R. Moorhouse, the new Blériot pilot, on his 50 h.p. racer.

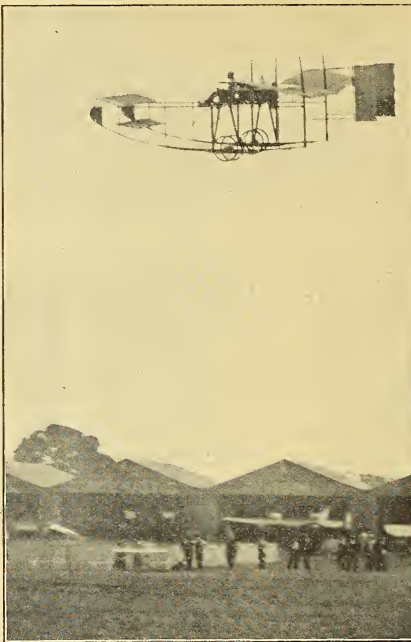
running short of petrol, and, being more or less surrounded by houses, he recognised Parker's Piece, and came down with a dry tank at 5.40. Machine covered up and left there for the night.

**FILEY.**—Ideal day for flying. At 10 a.m. two of school Blackburns brought out, one being Oxley's passenger machine, on which pupils make first passenger flights with instructor. Seats on this machine face each other, so that pupil can watch all movements of instructor. R. J. Weiss was first passenger with Oxley. It will be remembered that Mr. Weiss was pupil some time ago, but, after very short stay, had to leave school on business. Now returned to resume tuition. Mr. R. Blackburn (designer of Blackburn monoplanes) next up as passenger, and took very interesting photographs whilst at 100 to 150 feet. Scott then made one or two trips with Oxley, after which out alone on other machine. Put in about three hours' rolling practice, fair time for one day's work. Oxley made fourteen passenger trips in all, taking Mr. Metcalf, resident of Filey, also first lady passenger in Yorkshire, Miss Cook. Flying in progress no less than five hours.

#### Thursday, October 12th.

**BROOKLANDS.**—Pashley, on Humber, and Kemp, on Flanders, both testing, but troubles not located. The handsome *Vickers II.* came to an untimely end in a most regrettable way. Fisher, having done a number of circuits in capital style, proceeded to take Johnston up to test passenger carrying ability of machine. Thrice baulked in starting by other machines getting in his way, so he left the ground late and climbed rapidly to 60 or 80 feet. Started a left-hand turn, while still climbing, and banked the right wing too much for the radius of turn. Machine slid inwards, and, before it had time to dive properly and come up straight, the left wing-tip touched ground, though the machine struck almost nose on. Johnston, in front, was thrown against the cross-tube of frame, which he bent, being badly winded, and hurting ankle and eye, but not seriously. Fisher, unfortunately, though his legs and body were saved by the safety belt, caught his jaw on the steering wheel, which cut him badly and knocked him senseless, in which state he remained for about forty hours, when a marked improvement set in. Machine practically destroyed, but the steel construction was fully justified by the fact that, though everything bent, not a lug or a joint broke, and, except for a propeller splinter which pierced the petrol tank, there were no loose, broken pieces anywhere about. Whole accident in cause and effect very similar to that of Lieut. Porte, R.N., at start of the "Circuit." Another 40 or 50 feet elevation would have meant a safe landing. Walton-Edwards biplane also slightly damaged by falling into sewage farm, after doing a successful half-turn. Longstaffe doing improved work on Howard-Wright-Green, and getting into training for long-distance work. Ducrocq out over Weybridge in evening. Deperdussin out as usual. Chattaway, Sabelli, and Baldwin out in morning, last making particularly good progress. In evening Sabelli and Baldwin out, and Chattaway, Garne, and Richey all doing good circuits on brevè machine. Chinnery short hops on same. Pizey, on Bristol, out for trial, but found sun making bad *remous*, but took Captain Harrison and Major Benwell training spins. In afternoon Pizey out with Harrison and Harford, and then with Dr. Brooks, a likely recruit to aviation. Fleming, absent early part of week, up with Harrison and Harford alternately, and then Harford doing good straight flights at 25 feet or so. Later Pizey up with Major Benwell. Raynam testing Avro, now fitted with new Green engine, same as old 35 h.p. in size, but tested to give 45 h.p. on brake. Machine showing up well, and looking hopeful for Michelin competition. Lieut. Hewlett, R.N., and Graham Wood practising landing, and Mrs. Hewlett doing circuits.

**THE PLAIN.**—Morning's work started briskly by Prier taking Juliet for ten minutes on new two-seater Bristol monoplane to 600 ft. Smith-Barry and Busted also given flights, and great satisfaction expressed at splendid stability of machine. Pixton on No. 43 Bristol took Mr. Dacre for flight of twelve minutes. Solos made by Lieuts. Hooper (two) and Cross, Lee, and Smith-Barry (two). Lee then passed both tests for his certificate, showing excellent control. Pixton up with Lieut. Burney, R.N. (who had observed Lee's flights). In evening Lieut. Hooper passed first part of the test for his certificate. This officer's tuition lasted exactly four weeks four days, having joined school on September 12th. It should be borne in mind, however, that flying has been restricted owing to execrable weather. Lieut. Cross made two very successful solo flights, reaching 400 ft. in each. Pixton took Mr. Dacre out and gave him instruction in landing, after



Mr. H. Barber on the 50 h.p. Valkyrie at Hendon.

which he took up another passenger. Smith-Barry flew solos in fine style, landing in dusk. Gilmour then flew the single-seater monoplane, making a circuit, afterwards doing long solo in double-seater. Prier brought excellent day's work to conclusion by taking Lee for a flight in new two-seater monoplane.

**HENDON.**—At 7 a.m. Captain Loraine on Valkyrie, during temporary lull in wind, made several good straight flights. Unfortunately only able to get few minutes' practice before wind rose again. At 5.30 Capt. Loraine was up on school machine and flew in usual excellent style, landing faultlessly. Handing over machine to Chambers, he also made several successful straight flights. Unfortunately got into some very rough ground, necessitating a stoppage, while some wires were adjusted. At same time school pilot up on *Valkyrie II.*, fitted with auxiliary fuel tanks, carrying in all 22 gals. of petrol and 12 gals. of oil. Machine rose remarkably quickly, but thick fog made a lengthy flight impossible, and a descent was made after four or five circuits. Hopkins rolling on Chanter School Blériot. Davey, getting tired of rolling in circles, tried a straight flight against orders. Found he got on so well that he forgot to come down, and suddenly found himself charging his own shed. Might have made safe landing therein, but unfortunately found stake in way, with the result that left wing caught side of shed, wrecking wing, but doing no other damage. In thick fog, Salmel, instructor at Blériot School, made very fine flight on Gnome-Blériot. Blériot pupils out in force. Driver, Prenselli, Sacchi, Allen, Slack, and Parr all hopping, rolling, or doing straight flights, and some circuits. Abercrombie, late in afternoon, took out new type Anzani-Blériot, and flew in very fine style. Barber, testing new *Valkyrie-Gnome*, starting out again, did usual fine *volts planés* and switch-backs, banked turns, and straight flights "hands off." Captain Loraine out on *Valkyrie-Green* improving visibly, and apparently in fair way to handle the *Valkyrie* as well as its inventor and designer. Late in afternoon came news of Haniel's landing at Wembley. Lieut. Parke, R.N., having motored up from Chatham, took out Grahame-White-E.N.V. biplane, and after a few



circuits to get used to weights, went out across country in fog and disappeared for a quarter of an hour. On coming back, filled up with petrol, and went up for nearly an hour, doing right and left banked turns, in very fine style. It may be well to repeat statement made in *THE AEROPLANE* last week that Mr. Parke is in no way connected with the Grahame-White School, and is flying purely for sport; statements liable to give an opposite impression having appeared elsewhere. Mrs. Stocks later took out same machine and flew magnificently. She is the wife of a naval officer, and has had much experience of car driving. Though a slight, fair, rather fragile-looking little lady, she has apparently unlimited nerve and perfect "hands," as is shown by the beautiful way she lands.

**HUNTINGDON.**—Moorhouse, leaving Cambridge 6.30 a.m., arrived at Huntingdon at 6.30, covering between fourteen and fifteen miles in nine minutes. Later in day flew from Huntingdon round Peterborough and back in 27 minutes. After lunch, flew to Cambridge, had tea with some friends, and came back.

**LANARK.**—Ewen flying in afternoon, when aerodrome was visited by the Under Lord-Lieutenant of Lanarkshire, who was greatly interested in flying. Afterwards he was shown over monoplanes by Mr. Ewen and left feeling quite delighted. He expressed his intention of again visiting the school at an early date.

**FILBY.**—Oxley, on Blackburn, made several fine flights with passengers, including pupils. Scott again put in about three hours rolling practice. Weiss also put in some practice on the Isaacson-engined machine. Although not accustomed to so much power, he controlled very well, and hopes shortly to be making circuits with her.

#### Friday, October 13th.

**BROOKLANDS.**—Pashley, Longstaffe, and Kemp all out practising in morning. Humber and Flanders still unable to locate troubles, but Howard-Wright-Green going better and better. Ducrocq in evening out with passenger, and then practising bomb-dropping in fog, finally getting lost and coming down almost in river. In evening Pizey out with W. E. de B. Whittaker as passenger, latter now practically recovered from smash at Eastchurch. Fleming up with Captain Gordon, another likely aviator. Then Pizey out with Lieut. Harford and with Major Benwell. Finally Harford doing straights solus, till stopped by fog. Sippe, flying splendidly on Avro-Green, up at 600 ft. Raynham also doing well.

**THE PLAIN.**—Pixton started morning's work with Dacre on Bristol biplane. Mellersh and Smith-Barry, Lieuts. Cross, Hooper, and Joseph each made solos of fifteen minutes. Gilmour next went for solo on two-seater monoplane. Lee passed his height test successfully, qualifying for certificate. Bristol Company thus secured the honour of turning out China's first certificated aviator. Lieut. Hooper also passed remainder of tests for certificate. Work much hindered by thick fog. In evening Jullerot out for trial. Lieut. Joseph made short solo; Mellersh's flight of ten minutes; Busted took Dacre for a flight. Lieut. Joseph passed for first part of certificate.

**HENDON.**—Driver, Parr, Slack, Tremlett, Prenselli, Sacchi, and Allen, of Blériot School, all out practising, first three named making nice flights, showing they could pass trials for certificate without trouble. At 4 p.m. Capt. Loraine flying well on Valkyrie in puffy wind, meanwhile Mr. Barber flying *Valkyrie* 11, fitted with Regy propeller. Heavy rain terminated proceedings. Morris and Hopkins, of Chanter School, rolling in circles, more or less. De Villiers rolling in straight lines.

**HUNTINGDON.**—Moorhouse testing machine for weight lifting and general aerodrome flying, performing in his usual capital style.

**FILBY.**—Scott, on Blackburn, out rolling for nearly four hours, is wasting no opportunities in getting out, and will shortly be doing straight flights. Weiss also out, doing good work. Oxley again making several fine passenger flights.

#### Saturday, October 14th.

**BROOKLANDS.**—Longstaffe, on Howard-Wright-Green, going strong. Pashley, on Humber, now fitted with Avro propeller, suddenly found troubles disappeared, and flew five good circuits. Engine re-timed, by Hunter, of Avro School, and new propeller, put things right. Kemp, on Flanders, flying well, but still short of lift for long-distance load of fuel, despite extra revs. now got out of Green engine. Spencer out, with engine overhauled, and his pupil, Ballard, doing good circuits. Deperdussin pupils improving steadily. Wilkins, Sabelli, Baldwin, and Chinnery all doing well on taxi. Captain



Herbert Spencer on his biplane at Brooklands.

Richey, on brevet machine, making right and left circuits, and Chattaway left-hand circuits. In evening Bell out high up with W. E. de B. Whittaker on two-seater. Nasty gusty wind, and very misty, but Bell flying extremely well, and finishing with very neat *vol plané*. Raynham, on Avro-Green, up to 1,000 feet, carrying 13 gallons of petrol, enough to last five hours. Test highly satisfactory, and about to start for Michelin when fog shut down and stopped all flying. Bristol out, with Fleming testing. Then Lieut. Harford, for first departure from straight line, proceeded to do a figure of eight and a few circuits in good style. Afterwards Captain Harrison up with Fleming. Graham Wood, on Blondeau-Farman, doing good straight flights. Young, of Avro School, wishes it to be stated that in flying over the crowd on Sunday last week he did so in order to make room for a wide turn, by which he avoided the "wash" of another machine turning inside him, and on another occasion he did so to get a clear run to open landing ground beyond the enclosures, the ground in front being cumbered by machines left standing empty some way out from the railings—another reprehensible practice which needs attention by authorities. Wherever a machine stops it should be wheeled to the rails, if in a fit condition, before any work is done on it.

**THE PLAIN.**—Jullerot on No. 43 Bristol tested conditions. Lieut. Joseph passed second part of certificate. Smith-Barry also passed first part of tests, both observed by Baron Roenne. Busted took Dacre up. Hotchkiss took Lieut. Burney for a fine flight, being completely shut off from earth by clouds. Lieut. Cross made one solo; Dacre went for first solo and showed very rapid progress, tuition flights being under half a dozen. Pixton made cross-country flight with Lieut. Burney, Jullerot taking Lieut. Freeman. Prior on two-seater monoplane took Lieuts. Cross and Joseph and Hotchkiss for flights. Then Jullerot on No. 43 Bristol and Busted on No. 4 made solos, doing very sharp figures of eight. In evening Pixton



started with Lieut. Burney, and, after alighting for a slight adjustment, started off again for a long cross-country flight, eventually landing at Hayling Island.

**HENDON.**—In spite of slight breeze, big day's work accomplished at the Valkyrie School, from 11 a.m. till sunset. Machines in air almost continuously. Mr. Barber opened day with a fine thirty-minute flight on No. 10, meantime Capt. Loraine put in some good practice on school machine. For two hours Mr. Barber flew continuously on Valkyrie No. 10 and 11 alternately. Before lunch Ridley-Prentice made several on school machine, and Capt. Loraine had another fifteen minutes' practice. At 2 p.m. Mr. Barber ascended for long flight on No. 10. Rose to well over 1,000 ft., and flew off in the direction of Harrow; after making several very effective spiral *vol plans* over Edgware Road, again rose to 1,100 ft. and flew over Hendon towards Golders Green, eventually landing with splendid corkscrew *vol plané*. At 2.30 Capt. Loraine up on school machine and made fine flight of twenty-five minutes at 200 ft. Twice flew the length of ground with both hands above head. Later Ridley Prentice made fine circular flight, flying with usual steadiness and confidence. Capt. Loraine then took over machine and made six circuits, again of quite an exhibition character, letting go controls for long period. Chambers then made several good straight flights. All afternoon Mr. Barber was flying Nos. 10 and 11 alternately, and towards dark made passenger flight with Miss Trehawke Davies. Driver on Blériot flew three times round aerodrome at about 250 ft., finishing each with *vol plané*. Parr followed and did same things. Slack now quite able to take care of himself in air, even in good breeze. Salmat went across country, being away over half an hour. De Villiers on Chanter School Blériot in hopping and straight line flight stage, coming on well. Morris also improved, rolling in straight lines. Hopkins still rolling in circles. Gassler, flying length of ground, essayed his first left-hand turn. Chanter also out for a short time. Very good day; pupils out practising all day, and no breakages.

**HUNTINGDON.**—Moorhouse now assuming rôle of instructor, giving lessons to new pupil, Mr. W. Roberts-Bruce, who seems very promising. Four pupils already at school. In evening Moorhouse out for test flights in 30 m.p.h. wind.

**FILEY.**—Oxley out passenger carrying, on Blackburn, making trips with pupils; wind rather too strong for going out alone.

**Sunday, October 15th.**

**BROOKLANDS.**—Last day for Cross-Country Michelin prize. Raynham's Avro and Pashley's Humber ready to start, but wind and rain made any attempt impossible. Flanders machine taken to pieces ready for bigger wings. Astley brought out new Birdling monoplane with A.B.C. engine, a very pretty machine, but only completed previous night and not tuned up. Nevertheless promising well, and engine giving a healthy note. In afternoon Noel, on aged Avro-Farman, tried to fly, but wind jumping in gusts from 8 to 20 miles per hour and quite impossible to turn. Latest news of E. V. B. Fisher was that he was quite conscious at intervals, remembering accident and inquiring after Johnston, but most of time sleeping quietly. Considered to be out of danger if no complications ensue. New Martin-Handasyde now approaching completion. Longer and much lighter than last machine, and quite as handsome in design and workmanship. After so many disappointments, all wish well to the plucky partners.

#### The Barrow Fiasco.

An inquiry was held at Barrow on October 11th concerning the wrecking of the *May Fly*. Rear-Admiral Sturdee, Captain Nicholson, and Mr. Whiting inspected the wreck. Sir A. T. Dawson watched the proceedings on behalf of Vickers, Ltd., and Captain Sueter on behalf of the officers of the airship. Mr. McKenna and Lord Haldane were present, as well as several "experts" from the "Aeronautical Department of the Admiralty," whatever that may be. Three officers from the Army Balloon section at Farnborough were also present.

#### Economy in the Right Place.

Congratulations to Mr. Secretary Perrin and his assistant, Mr. Joseph, on the economical way in which they ran the club's part of the "Circuit of Britain." The entry fee was £200 for each competitor, and, as was announced last week, £40 of this has already been returned to each entrant. Unfortunately, THE AEROPLANE learns that a further repayment of entrance money is to be made in the near future.

As there were thirty entrants the sum received was, of course, £3,000, and £1,200 of this having been returned, it means that the actual expenditure was less than £1,800. Out of this the club had to pay the fees and expenses of numerous official timekeepers, had to pay travelling expenses for various

members of the committee inspecting the likely places for landing grounds, and making a further inspection of the grounds when they were actually ready for the race. In fact, the whole cost of organisation had to be paid out of that sum, a feat which is certainly worthy of recognition.

#### Another Aerial Post Proposal.

An enterprising gentleman connected with a privately owned aerodrome has recently issued a prospectus in which he proposes to hold a combined race and aerial post right round the British Isles. The idea is quite feasible, if properly worked, and in this case, as in the case of the Hendon-Windsor aerial post, the balance sheet would be quite interesting when the circuit was finished, just to show how much interest the affair created; only, being a private business, the promoter would be under no moral obligation to do so.



Mr. Willows starting from the roof of Heath's Garage. In the background is the dome of the Council House.

#### Balloons in Birmingham.

It will be remembered that in a recent issue of THE AEROPLANE an account was given of a balloon ascent made from the roof of Heath's Garage, John Bright Street, Birmingham. Two balloons were dispatched; one of these, the "Alpha," carried as passengers Messrs. G. F. Heath, W. A. Smith, L. Farquhar (of the Birmingham Daily Mail staff), and Master Graham Heath, with Mr. E. T. Willows (of "City of Cardiff" dirigible fame) as pilot, while the other balloon (the small one) carried one person, Mr. Willows' mechanic. The large balloon made a most successful trip over the city of Birmingham, Castle Bromwich, Whitacre, Atherstone, and on to Leicester, finally coming to earth about 5 p.m. at Oadby, some three to four miles from Leicester on the Market Harborough road. This is the first of a series of trips which are being inaugurated in conjunction with Messrs. E. T. Willows, Ltd., of Villa Road, Handsworth. The roof of the garage being perfectly flat lends itself admirably for the purpose of balloon ascents, and the applications which have already been received for seats indicate that these trips are likely to become very popular.

#### The Far East and Aviation.

The first genre Oriental to win his certificate is Lieut. Do Hu, a native officer in the French service in Annam. After a great deal of flying as a passenger with Lieut. Menard, on a biplane, he passed his brevet on a Blériot at Etampes. Mr. Zee Yee Lee, a Chinese pupil at the Bristol school on Salisbury Plain, has now passed for his certificate, and having done so he is the first subject of the Emperor of China to become a certificated pilot aviator.

## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

## "Dupekmpoy."

Sir,—Your query on p. 392, "And what is a 'Dupekmpoy'?" has given a terrible shock to my belief in editorial omniscience.

The envelope reproduced—quite worth fivepence—was originally addressed in Russian, upside down, as is their little way there—

AT BRUKLENDISIU

NEAR  
LONDON.

AERODROM (blotted attempt to write  
"track" in Russian. German

"trek" put in below),

(Intercepted honorific.) DIRECTORU,

AERODROM

TREKA.

Then it has been interlined with rather curious German, ending, in the bottom corners, with "Automobil trek."

In Russian  $p$  is  $r$ ,  $m$  is  $t$ , and  $u$  is  $i$ , and often  $g$  is  $d$ , so "Dupekmpoy" is translated "Direktoru," "To the Director."

Why not employ your leisure in the fascinating study of Russian? It is more excitingly topsy-turvy than an aeroplane standing on its head!

Fraserburgh.

"ASPRING."

[Many thanks to this erudite correspondent. Learning Russian would be a nice game for winter evenings, but an editor has no leisure.—Ed.]

## "The Aerial Force."

SIR,—

When somebody thought aviation  
Would gain from us all admiration,  
By proving that letters and humble p.c.  
Could soon fly away with our spare £ s. d.,  
Which would help on the cause of some great charity,  
Well, it caused a terrific sensation!

You just stop,

At a shop,

And take the lift up to the top,  
And you can buy postcards and envelopes there,  
Your papery passengers must pay their fare;  
For sixpence 'tis cheap to be whirled through the air,  
Provided they don't let you drop!

They say that this new agitation  
Will be of great use to the nation,  
But after a flight of a half-hour or so,  
The letters come back to the old G. P. O.,  
Are delivered, rat-tat, in a way you well know—  
And how does that help aviation?

'Tis a farce,

Let it pass,

And don't make yourself such an ass,  
By sending out letters and postcards galore,  
You won't have an aeroplane stop at your door;  
But stay—I've just heard you can't send any more,  
It excited too much indignation.

Bromley.

B. L.

## Foolhardy Feats.

Sir,—I beg to call your attention to the foolhardy and dangerous feat of some flyer on a Blériot monoplane, on the 10th. He appeared over Harrow, about 80 or 90 feet up, at about 4.15 p.m., when the school bill or roll-call was being held. He came from the direction opposite to Hendon, and passed once right over the bill-yard, clearing the houses by about 50 feet.

I do not complain especially of this, but then he turned and approached the yard at about 50 feet up.

When a little way off he shut off his engine and glided down a small way. He then successfully restarted his engine and cleared the houses by less than 20 feet. I believe, and I have seen a good many aeroplanes in flight, that if his engine had not restarted, and pulled well immediately, that he could not

have missed coming down on the bill-yard, where about 400 Harrow boys were assembled.

He was, of course, cheered, as the majority of the boys had never seen an aeroplane in flight before, and did not realise the danger.

Then the weather began to look bad and he went off in the direction of Hendon.

I think that, in the long run, feats (?) like this do an immense amount of harm to aviation.

Harrow.

HARROVIAN.

[This correspondent is quite right. Such feats may be highly educative when they pass off without accident, but the risk is always there, and, while the sport is so young and needs such careful up-bringing, they are not worth taking.—Ed.]

## Aviation in South Africa.

Sir,—I am not yet in a position to give you much detailed information concerning the progress of the Aeronautical Society of South Africa.

We are busy with the journal, which will contain some useful articles, such as—

- The Meteorological Conditions of South Africa;
- The Probable International Aviation Laws;
- The Patent Laws of England and South Africa Compared;
- The Progress of Aeronautics in South Africa;
- Aeroplanes for High Altitudes, etc., etc.

We are doing all we can to help Mr. Weston to complete his tour of South Africa with his Bristol planes. He is now at Bloemfontein, and we managed to raise a good guarantee fund for him there.

We are also doing what we can to induce the Durban Town Council to include in their official programme of amusements for next season an aviation display. They have already put up a small sum to induce Mr. Weston to go there.

We have asked Mr. Spencer to come to Pretoria to see if he could arrange a parachute descent, and probably make some balloon ascents with passengers. Hydrogen gas would have to be used, as there is no coal gas in Pretoria.

We hope soon that the aviation school at Olifantsfontein, near Pretoria, will be started. Much depends on the interest shown in Weston during his tour.

We have recently investigated some patents for an airship which has been designed by Mr. A. Heineke.

He endeavoured to raise a syndicate with a capital of £1,500 to cover the patents and construct a large working model, and ultimately to start a company for running an airship service for carrying mails between Rhodesia and Cairo.

The scheme, of course, is far too problematical to expect people to invest money in. His ideas, however, of an airship are extremely practical, and I seriously think that his ship would be under perfect control and easily handled. I also believe that the most paying route in the world for an airship service is between Rhodesia and Cairo, as six or seven days would thus be saved in the transmission of mails from Johannesburg to London.

Pretoria.

A. M. ROGERS (Major, R.E.S.).

## A Double-engined Canadian Machine.

Sir,—News just to hand about the double-engined "Short" biplane, and thought I would inform you that I have been developing a similar machine for the past six weeks (plans actually commenced on Sunday, August 20th).

I hope to send you the plans for inspection in a few weeks, but meantime would like you to know that I have not copied. My machine is a "headless" biplane, both engines being in front of pilot.

Congratulations on the paper. It's a "stunner."

Winnipeg, Canada.

GEO. MACWILLIAMS.

## Experiments.

Sir,—I read some time ago an account in the daily papers of the experiment tried with the Army airship, and I came across another account on Saturday, 7th inst., in a contemporary of THE AEROPLANE. Can it really be possible that everyone has been misled, and that the so-called accident to the Naval airship was, like the Army one, only a big experiment, the object of which was presumably to test the strength of the balloon fabric in case of any framework giving way? Of course, £40,000, to £100,000 seems a large sum to spend on an experiment, but even this would be justifiable when spent by our Naval authorities for the cause of upholding our aerial supremacy. All praise is due to the energetic and fearless men who organised this. Let us hope it has served its object.

Birkenhead.

COLLAPSE.



### A Steam-Driven Model.

Sir,—The following is a description of the steam-driven model, photographs of which I send you.

The engine is of the horizontally opposed type, and has two single-acting cylinders,  $\frac{5}{8}$  in. bore and 1 in. stroke. It has a rotary valve, and weighs  $3\frac{1}{2}$  ozs. The boiler is made of 10 ft. 6 ins. of 5-32 in. outside diameter 21 gauge steel tube, coiled up in the usual form for flash boilers.

The water is pressure fed from a steel reservoir,  $5\frac{1}{2}$  in. by  $1\frac{1}{2}$  in., which is half filled with 2 ozs. of water. The remaining space is used to compress air in, which is done by a foot pump. I have no accurate idea of what the pressure is, as I usually judge by the fact that I simply can't get any more in when I have finished pumping up.

The boiler is covered in by a steel case .0045 of an inch thick, lined with asbestos and perforated as shown in photographs.

In front of the water reservoir is the benzoline tank, which is also pressure fed, but very little pressure is needed for this. The spirit is led up under the boiler case to the front, where it goes round vaporising coils in the usual manner with benzoline blast lamps. The flame points rearwards, in order that it may not be blown away from the boiler when in flight.

The lamp requires  $\frac{1}{4}$  oz. of benzoline to vaporise 2 ozs. of water. This plant weighs approximately  $1\frac{1}{2}$  lbs., and will give a steady 12 oz. thrust on the 15 in. propeller for thirty seconds. I have had over 16 oz. thrust, but not a steady one.

The main plane is 5 ft. span, and is double surfaced with jap silk and proofed with celluloid dissolved in amyl acetate. The chord is 10 ins. in the middle for 10 ins. of span. This centre part is aluminium covered, being liable to catch the

flame. From here it tapers to 7 ins. The tips are upturned and rounded.

The front edge of the plane slopes back, which gives the appearance of an inverted dihedral in the rear view.

The plane is stayed with eight wires, four above and four below.

The elevator is 2 ft. 6 ins. span, and the chord tapers from 4 ins. in middle to 3 ins. at ends. It is double surfaced.

The frame is of ash, with bamboo struts. The wheels have steel rims made of piano wire, 16 gauge, and are wound with fine steel wire across to the hubs, making spokes actually in tension. All joints in the framework are bound with silk tape soaked in glue, which forms a lug round the spars.

I first took the model out on September 3rd, and on the second run the back wheel collapsed, letting the propeller touch the ground and breaking it off at the boss. One half stayed on, and the vibration of the engine, due to this, tore the two hindmost fixing screws out, leaving the engine free to jerk up and down till it broke the steam-pipe off short.

I then tried gliding the model, and finished the other two wheels.

On September 10th I took it out again, having made new wheels and reduced the elevator, which I found too large when gliding. The first run was just a tour over the ground. I then tried the elevator up a bit more, and the model rose after a good run and got up to about 12 ft., when the power gave out.

I then tried launching by hand. Through not starting it fast enough the model dived and broke one wheel off. However, I got it launched the next time, and it was during this flight that a friend snapped it. The photograph plainly shows the missing left wheel. [An excellent "bull,"—Ed.]

The power finishes in the air, and the model then glides down at an angle of about 1 in 6. It has approximately 4 square feet of surface, and weighs 3 lbs. complete with fuel.

I am at present making another frame and boiler with larger fuel and water capacity, and hope to get longer flights, having only had about 150 yards as yet. Trusting that this will be of interest to your readers,

Westcombe Park.

H. H. GROVES.

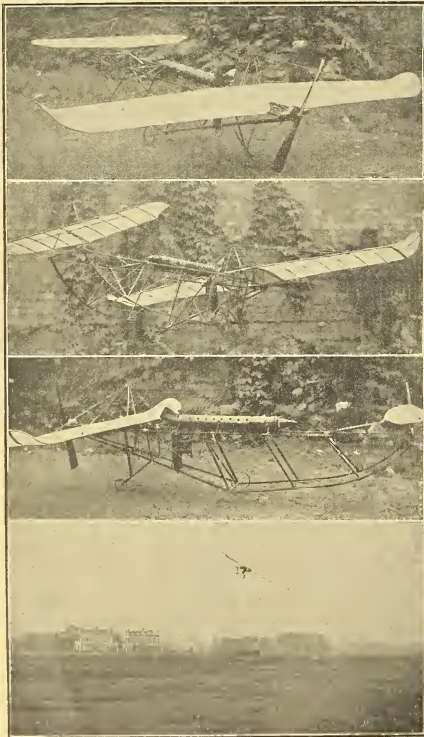
[This very noteworthy model was not exhibited at the Horticultural Hall owing to cost of space, but anyone interested in really practical models who would like to see the machine in operation can communicate with Mr. Groves, c/o THE AEROPANE, 166, Piccadilly, W.—Ed.]

### THE VISITORS' LIST.

MR. OSWALD WATT, who, by the way, disclaims the title of captain except when on actual military duty in the Australian citizen army, accompanied by MR. BUSTEED, one of the very best of the Bristol pilot instructors, came to talk over aviation in Australia. Mr. Watt is already on his way to Australia, but Mr. Busteed will not, in any case, leave till after Christmas, and it is possible that he may stay on still longer, so that he will still have the opportunity of training a number of aviators before he leaves. Both Mr. Watt and Mr. Busteed are patriotic Australians, and are determined to do their utmost to help on the formation of a proper aerial defence scheme in Australia. Although Mr. Busteed is one of the finest biplane pilots in this or any other country he is, nevertheless, enamoured of the monoplane, and hopes to get in some work on the new Bristol monoplane in the course of the next few weeks.

MR. WILSON, of Arthur Turner and Co., the British agents for the Bréguet machines, gave a most glowing account of a visit he recently paid to the Bréguet works at Douai. He says that the works are most perfectly organised, as, indeed, one might expect with an engineer of M. Bréguet's calibre at their head, and Mr. Wilson reports very great activity at the firm's flying ground, which is about four kilometres out from the town. They have quite a number of civilian pilots there, as well as a big military establishment, which, though using the same aerodrome, has its sheds and their surroundings carefully separated from the firm's own section. Though they are retaining their original and distinctive lines, various little alterations are being made in the Bréguets, as noted in the description of those entered for the French military trials, which appeared in last week's AEROPANE.

MR. GORDON BELL reports excellent progress at the Deperdussin School at Brooklands, where the pupils are all making quite satisfactory progress. Mr. Bell is particularly enthusiastic over the two-seater, especially after the speed tests to which it was submitted during the visit he and Lieut. Porté



Above, three views of the model at rest; Below, flying over Blackheath.



paid to the Air Battalion's headquarters at Farnborough. Mr. Bell's first public appearance as pilot of the two-seater at Brooklands on Sunday of last week gave one a particularly good impression of the machine, as he flies very steadily, his *vols planés* in particular being extremely neatly finished.

**THE HON. ALAN BOYLE**, just back from a long trip on the Continent, said that he is shortly starting for Ceylon, where he is going to take to coffee planting. He is now looking quite himself again, albeit a shade stouter and older than when he was doing such excellent pioneer work on the little Avis monoplane at Brooklands. He still complains that his memory is bad, but no one would know it unless he said so, for his recollection of the early flying days is as clear as that of most people who were with him at the time. His doctors forbid him to fly again, which, under the circumstances, is probably wise, but it seems a pity that he should sever his connection with aviation and leave others to reap the benefit of the experience he gained at so much bodily and financial cost, for his early work at Brooklands was most valuable and informative.

**MR. D. LAWRENCE SANTONI**, of the British Deperdussin Syndicate, was enthusiastic over a new machine just bought for the Brooklands School. This is a 35 h.p. racer, with the latest Anzani engine, known as the "Type Ministre de la Guerre." The machine is precisely like the machine driven by Valentine in the "Circuit," but altered and improved in certain details. The engine, instead of being fixed inside the fuselage, as in the "Circuit," and the present brevét machine, is placed outside, as in the two-seater, where it is easier to get at and keeps cooler. Mr. Santoni is naturally very pleased with the success of the school at Brooklands, where new pupils are joining every week, and several of the early pupils are now ready for their certificates as soon as opportunity offers. Further developments are under way, and **THE AEROPLANE** hopes to be able to make some interesting announcements respecting this excellently managed school before long.

**MR. GUSTAV HAMEL**, fresh from his cross-Channel flight, gave a vivid description of his experiences. He started from Hareldot soon after 1 p.m. on the new Bleriot two-seater with his suit-case in the passenger seat, some sandwiches and a couple of apples in his pocket, and, above all things, a novel, in case he came down in the Channel and felt bored while he was waiting to be picked up. As an additional safeguard, in case by any chance he got pitched out into the water, he wore a coil of air tube, similar to that used in the wheels of the machine, round his body to act as a lifebelt.

The engine being a Gnome and quite new, everyone was rather uncertain as to how long she would run before she got hot, so he took the machine straight up to 3,000 metres (nearly 10,000 ft.), and at that altitude the engine kept beautifully cool and fired exceedingly well. A number of people were on the lookout for him along the South Coast, and though it was comparatively clear when he passed over Dover, none of the official watchers caught sight of him, which proves that it would be possible for quite a number of aeroplanes to get in and out of the country without being seen (saccharin smugglers and customs officials please note).

As he got farther inland the fog got worse, so he came down at Maidstone in the hopes of it clearing. Finding that matters improved very little he went on till he reached the Thames, where he turned westward through London along the river. Practically the whole way he had to keep on altering the petrol and air mixture for the motor, so the lower the alterations in atmospheric conditions. At the greater altitude at which he was compelled to fly along the river the engine began to overheat, and from the docks onward he was several times obliged to switch off and plane down quite close to the water to give it a chance of cooling.

Fortunately the machine has an exceedingly good gliding angle, and so the long glides really were useful. On several occasions the engine was so hot that it went on firing for roof, or so after he had switched off. He attempted to leave the river at Hammersmith, but the fog was so dense that he kept on to Kew, where he came across the canal, which is an old friend of his since his Hendon-Brooklands flights. He followed this in the hopes of getting sight of the River Brent, which would lead him quite close to Hendon, but the river was too small to be seen through the fog, so he ultimately came down near Wembley in a field which proved to be close to the river.

On landing he found the machine heading straight for a stone wall, so, jumping out of his seat, he crawled as fast as he could along the top of the fuselage, so as to get all

his weight on to the tail skid and drive it into the ground as a brake. This manoeuvre, which is well worth noting by pilots of the new type Bleriot, succeeded admirably, and pulled the machine up a few feet short of the wall, so saving a broken propeller at least. It must be remembered, of course, that the chassis of these big two-seaters are much too high to permit of the old single-seater trick of jumping out on to the ground and hanging on to the fuselage.

**MR. FOWLER**, of the Grahame-White School, accompanied by **LIEUT. PARKE, R.N.**, called to talk over flying in general. Mr. Fowler is at present learning to fly on a biplane of the old type, but has a preference either for a monoplane, or for a biplane with the engine in front. He is making quite good progress, and, as he takes aviation seriously and studies his subject, he should make a really useful flyer.

**MR. C. COMPTON PATERSON**, accompanied by **MR. GUY LIVINGSTONE** and **MR. DRIVER**, called to discuss the prospects of quite an excellent scheme in which these three gentlemen are interested. Mr. Paterson has recently been building a new biplane, which by the time these notes appear should be under test at Brooklands. When arranging for the accommodation of the machine while testing, he naturally had a wish to do the work at the scene of his former triumphs at Hendon, but somehow he was unable to obtain a satisfactory arrangement, so he fixed on Brooklands, where he is sure of a more than friendly reception. Mr. Driver is now flying a Bleriot exceedingly well, and has long been a sound flyer of a biplane, so he should be a valuable asset in the venture undertaken by the trio, in which Mr. Livingstone will be the manager of the purely business arrangements. Between the three the new partnership numbers many friends, who will wish them every success. **THE AEROPLANE** hopes by next week to have permission to announce the partners' programme.

### The Latest Valkyries.

Considerable activity reigns at the works of the Aeronautical Syndicate, Ltd., at present, a new biplane being in course of construction, and the school machines being busy.

The biplane, which is in general outline of the correct P-P-21 type, familiarised by Bleriot and the Avro, embodies some quite new ideas of Mr. Barber's. These will be found chiefly in the lateral and longitudinal stabilising surfaces, the tail in particular having a capacity for automatic correction of flying angle which is expected to open up a completely new field of practice in this respect. This machine should be ready to fly in a couple of weeks from this date.

Mr. Barber himself has been testing a new Valkyrie-Gnome, which is flying extremely well. Though built on the now familiar Valkyrie lines, there are various minor alterations in constructional details which make for added strength and reduced weight and resistance.

As there are likely to be considerable developments in the syndicate's works ere long, **THE AEROPLANE** is permitted to state that there are a few vacancies for apprentices to be filled at the present moment, and that room can be found for one or two premium pupils provided the said pupils really intend to take up aeroplane construction seriously.

### A New Engine.

The Viale engine now in Mr. Ducrocq's care at Brooklands is well worth the attention of visitors. It is an air-cooled radial engine, with stationary cylinders, and is particularly neatly made. The peculiarity about it is its enormous valve area. The inlet valves, on the top of the cylinders, are of very large size, and there are two exhaust valves to each of the five cylinders, these being side by side in a pocket on the front of each cylinder. The idea in using two valves is to have very large valve area without the danger of the valve warping, which is the besetting sin of large single exhaust valves. Mr. Ducrocq has recently fitted the engine with a small Rudhardt magneto in place of the make originally fitted, and says he gets even better results.

### More Bargains.

Reference was made recently to a sale and exchange business run by Weston Hurlin and Co. A recent list of their bargains is particularly interesting, including as it does monoplanes, less engines, from £50 up, which ought to be low enough to suit any experimenter. There are also some very good things going in engine bargains which are worth investigating.

### An Adventurousome Machine.

Few machines have managed in a few weeks to put in so many adventures as Mr. W. B. R. Moorhouse's Bleriot. When it was brand new Mr. Radley flew it from Calais to Folkestone,

via Dover, in rough weather, making about the fastest cross-Channel trip on record. A few days afterwards Mr. O. C. Morrison started on it to fly from Folkestone to Ventnor, and came down in the sea, proving for the first time that a Blériot will keep afloat for a considerable period. Since then Mr. Moorhouse has flown it from Huntingdon to Brooklands and back, and over the country round Huntingdon. It should be noted, however, that it is not the machine on which De Caneau won the "Circuit of Britain," as stated in various daily papers, that machine being at the "Festival of Empire."

### Noteworthy Models.

Visitors to the Model Engineering Exhibition at the Horticultural Hall should not forget to note the exhibit of Mann monoplanes. These include a machine in which the large plane leads à la Blériot, and this machine has been very successful. Mr. Mann was experimenting with similar machines two years ago, but until quite recently he got better results from the type commonly known as the "tail rigger." The machine used by Mr. Grimmer in his recent demonstrations at Felixstowe is also shown, as well as a duplex-gear winder, adaptable to any sized model, with which two propellers can be wound up simultaneously. An exhibit is also being made of large framed photographs of some of the leading Mann models of 1909, 1910, and 1911, showing in a striking manner the lines on which the model has developed. Those interested in models should note that the Mann monoplane has been awarded twenty-three prizes in open competition. Model aero clubs should note that Mr. Grimmer is prepared to give lantern lectures on aviation in any part of the country. Naturally he specialises on models and gliders, but he can give quite a good deal of information about full-sized machines, as he has done a considerable amount of passenger flying. It is interesting to note that Willis Bros. delivered 500 of the "Mann" models in the first seven weeks, and since then at least 250 orders have been placed. Owing to this rush of work the makers are behindhand in delivery, and unfortunately some of the August orders are still undelivered. A very large number of orders have come from abroad, M. Gache, the French agent, having been very active. Mr. Melcombe, late of Bedford, has been appointed representative in the States, and should do well there.

### Models at the Horticultural Hall

As far as aero-models are concerned I am afraid that the model exhibition, good as it was in other ways, was rather a frost. True, one or two of the exhibits were extremely interesting, and Mr. Twining, with his usual enterprise, had a stand on the main floor; but in the main I fear that not much interest was taken in the aero-models as a whole.

Among the scale models the only two showing real care in workmanship were a fine model of a Blériot and Mr. G. P. Bragg-Smith's scale model of his hoped-for full-size machine. Both of these, however, were exhibited at the Olympia Aero Show last March. None of the new examples seemed to show any approach to them in quality.

The flying models, also, were somewhat lacking in novelty (and novelty is, after all, the main attraction at a show). The Bragg-Smith model, though excellent, is as it were. The new Mann racer is interesting; it has no elevator, but a non-lifting tail, and has a frame which projects some eighteen inches or more beyond the main plane. Master Mann is evidently not in entire agreement with Mr. Grimmer's views concerning extra long fuselages.

In the power plant class there was a cleverly designed three-cylinder rotary steam or compressed air motor, which shows much promise, and also a two-cylinder opposed rotary petrol motor, with metal propeller blades fixed to the cylinder heads. This is a remarkably clever conception, and appears to work, judging from photographs of the engine running. One would, however, be inclined to fear that, in a large engine, no cylinder head would stand the strain, though a full-size engine of the kind was shown in Paris last year.

The rest of the exhibition, though immensely interesting to anyone fond of small-power engineering, hardly comes within the province of THE AEROPLANE. On the whole it appears that aero-model makers may be divided into two classes: those who study flying and those who merely enjoy the intricate miniature work involved in making scale models and who are not in the least interested in the theory or practice of the subject. The former, which is the useful class, evidently prefer to keep their machines for use rather than expose them to the fatuous remarks of the exhibition visitor.

P. K. T.

### Conisborough and District Aeroplane Society.

On Saturday, 14th, at Sheffield, under the auspices of Sheffield Aero Club, for whom Mr. Noble of the Birmingham Aero Club, and Mr. J. H. Champion (ship of the Midlands) was flying, C. C. Allport, of the Conisborough Aeroplane Society, won two events out of three. First for speed and other for landing nearest given post. He also got second for distance, with 375 ft., which was won with 405 ft. There will be another meeting held at Conisborough shortly. Anyone wishing to compete please write—T. S. WALLIS (Hon. Sec.), the Conisborough Aero Club, Conisborough.

### The Manchester Model Aero Club.

Fifth weekly flying meeting was a great success. Day rather misty but large crowd at aerodrome well rewarded by display. About a dozen models did excellent flying. Record flight for afternoon was 1,185 ft., and the record for duration 48 secs. One model gained notoriety by completely breaking itself in mid-air, broken pieces scattering spectators in all directions, much to their amusement. Sixth weekly meeting to be at Trafford Aerodrome, near the "Hives," at 5.30 p.m. on December 21st. Introduction kindly write—MR. KEMURU KIRINA (Hon. Sec.), 40, Bignor Street, Cheetham.

### The Paddington and Districts Aero Club, 1910.

Club should now be welcome to residents in or near Paddington, having at disposal workshop where during winter evenings members may work on models and on full-size machine if they wish to do so. Meeting will be held on Wednesday next, when it is hoped more new members will join. 15s. per month is only charge. Address inquiries to Model Secretary, 2, Edbrooke Road, Paddington.

### Yorkshire Aero Club (Model Section).

The Leeds Model Aeroplane Club held general meeting on 14th, and was reorganised. Will now be known as "the Model Section of the Yorkshire Aero Club." Letter was read from Committee of Y.Ae.C., represented by Mr. S. W. Fitzgerald, including suggestions that to keep in touch with model matters, President of Model Section should be member of their committee. This approved by members, and Mr. S. W. Fitzgerald unanimously elected to the position. Decided also that Mr. Tom Walker should stand as Secretary and Treasurer, general opinion being that organisation of late club was proof of capabilities. Committee will comprise Messrs Thornton, Beckett, and Hill. Members of Model Section will be Associates of Y.Ae.C., having privileges of members, except that they will not vote on governing of Y.Ae.C. They can attend all meetings, lectures, and flying meetings, and partake of any privilege to be obtained by members of the Y.Ae.C. The annual subscription to be 2s. 6d., of which 6d. shall be payable to the Y.Ae.C. as associates' fee. All in Leeds and district can be taken as members, ladies included. Flying meetings will be held, weather permitting, every Saturday afternoon, from 2 o'clock, on Carlton Hill Barrack Ground, off Woodhouse Lane. Committee of Y.Ae.C. intend putting up prizes for competition amongst model fliers. All communications to be addressed to the Hon. Sec., 5a, Hulland Street, Hunslet Road, Leeds.

### Blackheath Aero Club.

Club held two meetings this week-end; first marred by the mist. Outstanding feature was Mr. Dollittle's experiments with twin tractor-screw monoplane of original design, several very cute ideas in it.

At second meeting several members brought out monoplanes designed for half mile, but these resolutely refused to come up to expectations. Club honoured by visit from model constructor of Reading. Takes this opportunity of inviting any model makers to come to the B.A.C.'s flying grounds and witness flights.

Next meetings at Kidbrooke, October 21st, 3 p.m. October 28th there will be "Distance" Competition, with substantial prizes 1st and 2nd will be offered by Mr. Rippon, Sec. Entries to be sent to Secretary on or before October 27th. Early morning competitions will be held at Lee Aerodrome as usual.—ARTHUR RIPPON, Junr. (Hon. Sec.), 5, Limesford Road, Nunhead, S.E.

### Models at Bristol.

Meeting held on Downs last Saturday. About twenty models appeared, but as fifteen were of same type (1-1-1) it was decided to postpone competition until larger machines were ready. "Smallcraft" models much in evidence, and although they have an aspect-ratio of 12 to 1, and are about 15 in. long, they flew distances of 300-900 ft., several times, their record being over 1,000 ft. by "Vespa" (similar to Givaudan) double monoplane flew well, but turns round and round on its axis. Unpleasant for pilot unless on universal joint. Large models not tuned up, but flew a few hundred feet.

Audience interested and useful, though dog—probably socialist—with pursued wanderer. "Smallcraft" models not so good. Next meeting in few weeks' time; will be duly announced.—RYDER V. TIVV.

## The Aeroplane, 166, Piccadilly, W.

Telegraphic Address: AILERON, London. Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM		ABROAD	
3 months, post free	- 1 8	3 months, post free	- 2 9
6 " " "	- 3 3	6 " " "	- 5 6
12 " " "	- 6 6	12 " " "	- 11 0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newscasters, each issue can be obtained direct by forwarding remittance as above.



**MISCELLANEOUS ADVERTISEMENTS**

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted ONLY—18 words **1/-**. 1d. per word after.

**Information Wanted.**

ANY PERSON ABLE TO GIVE INFORMATION as to the WHEREABOUTS of PERSONAL EFFECTS of the late Lieut. R. A. CAMELL, who was accidentally killed on the 17th September, 1911, whilst flying at Hendon, would OBLIGE by COMMUNICATING with the undersigned on behalf of the relatives.

COOPER and BAKE, Solicitors,  
6 and 7, Portman Street, Portman Square, London, W.

**PATENTS.**

TO INVENTORS AND OTHERS INTERESTED IN PATENTS.

THE AEROPLANE will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to THE AEROPLANE, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

**MACHINES.**

FOR SALE, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**£400** SPECIAL OFFER of twelve AVRO Biplanes complete with 35 h.p. Green engine. Usual price £600. Offer will draw November 30th. Write at once for particulars.—A. V. ROE & Co., Brownsfield Mills, Manchester.

MILITARY type Farman, Guôme Engine, cases and spares for sale, price £650. Instalments accepted from responsible purchaser. Apply Box 334, THE AEROPLANE.

**ENGINES.**

**50-60** H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—THE AEROPLANE.

**PROPELLERS.**

PROPELLERS.—"Avro" Propellers of proven efficiency 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co. Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS**

hold all Records, used by all leading Aviators. The Best, Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn

**TUITION.**

TUITION, with or without limited liability, Blériot XI; personal instruction.—CHANTER, Aerodrome, Hendon.

**£50.** TUITION in flying till certificate is won. Avro pupils won Manville, Brooklands aggregate, 1st, 2nd, 3rd; Brooklands, October 4th, 1st, 2nd, 3rd. The AVRO School for most thorough and all-round instruction. A. V. ROE and CO., Brownsfield Mills, Manchester

L ANARK AERODROME, N.B. Tuition for R.Ae.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

**TUITION—Continued.**

BARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barhead.

DEPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD. 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands

**EDUCATION.**

THE POLYTECHNIC, 309, REGENT ST., W. SCHOOL OF ENGINEERING (EVENING DEPT.). The Course in AERONAUTICAL ENGINEERING includes Lectures, Laboratory and Class Instruction in AERODYNAMICS, THEORY applied to AEROPLANE DESIGN, MOTOR CAR and AERO ENGINES, AERO ENGINE DESIGN, AEROPLANE DRAWING and DESIGN, and WORKSHOP PRACTICE in AEROPLANE WORK. Fees: Complete course, including three or more of the above subjects, 12/6. Single subject, 10/-. Full prospectus free on application to ROBERT MITCHELL, Director of Education.

**MISCELLANEOUS.**

PRACTICALLY NEW, the following are for Sale.—45 h.p. 8-cylinder Engine, tested, £80; Complete Bosch Dual Ignition, £7; 2 Propellers (Weiss and H.P.), each at £5; 1 Monoplane, beautifully made and tested, £45; 1 Steering Column and Control, £6; 1 Enclosed Universal Joint, £3; 1 Petrol and 1 Oil Tank, £3. Also Sundry Spares. Will sell separately, or accept offer for lot. GRATZ, LIMITED, 44-46, Whitfield Street, London, W.

HANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Fortholm, Huntingdon.

**FLYING MODELS.**

SPECIAL OFFER TO ADVERTISE.—Reduced size of famous W. H. C. flyer. Prize winners. This monoplane, best workmanship, built up planes, twin propellers, silk covered. Complete, ready for flight, 3/-. WESTON HURLIN Co., 13, Milford Lane, Strand.

RISE OFF THE GROUND UNDER OWN POWER. Prize winner. A splendid model, well finished. Complete, ready for flying, 5/-. SPECIALLY TO ADVERTISE. Guaranteed. Also larger sizes at 10/-. Really splendid flyers.—WESTON HURLIN Co., 13, Milford Lane, Strand.

"MANN" MONOPLANE.—The model with the largest sale. Come and see our exhibits at the Horticultural Hall, Westminster (Vauxhall or St. James' Park stations). "Mann" Monoplanes 15/-, parts and drawings for constructing 5/-. "Mann" winders 5/-. "Willis" rubber and lubricant 1/4 per dozen yards and 6d. per bottle respectively, everything for model making from WILLIS BROS., 14, Wellington Square, Hastings.

THE CHEAPEST IN THE WORLD.—1d. How to build a prize winning monoplane, or 2d. post free. Our prize winning monoplane complete, 5/6; flies over ¼ mile every time. Elastic from 9d dozen yards. Geared winders, 1/-. Elastic lubricant, 6d. Wire, wood, aluminium, and all accessories. Cheapest house. Send stamp for lists.—"REQUISITES," 47, Bedford Street, STRAND.

"M.S.C." MONOPLANE.—A genuine ¼-mile flyer complete with geared winder, post free 8s. 6d.—MURRAY STANGER Co., 20, Brograve Road, Tottenham, N.

MODEL PROPELLERS.—Genuine CHAUVIERE—8in., 10in., and 12in. diameter, always in stock. GEO. W. GOODCHILD and PARTNER, 30-32, Farringdon Road, London, E.C.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, OCTOBER 19th, 1911

No. 20

## Three Fresh Triumphs — FOR — "BRISTOL" Aeroplanes

*BROOKLANDS, OCTOBER 4th.*

MANVILLE (passenger carrying) PRIZE won by  
a "BRISTOL" BIPLANE

BROOKLANDS AGGREGATE won by  
a "BRISTOL" BIPLANE

DAY'S AGGREGATE won by  
a "BRISTOL" BIPLANE

### The "BRISTOL" Flying Schools at SALISBURY PLAIN and BROOKLANDS

are the finest and best equipped in the world  
and OBTAIN THE BEST RESULTS.

Last month 10 Pupils took Brevets.

Average Time of Tuition 3 weeks.

SPECIAL TERMS TO NAVY AND ARMY.

Write for Terms  
to—

The British & Colonial Aeroplane Co., Ltd.,  
FILTON, BRISTOL, ENGLAND.

THE "AEROPLANE," OCTOBER 26, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, OCTOBER 26th, 1911.

No. 21

## The Convert.

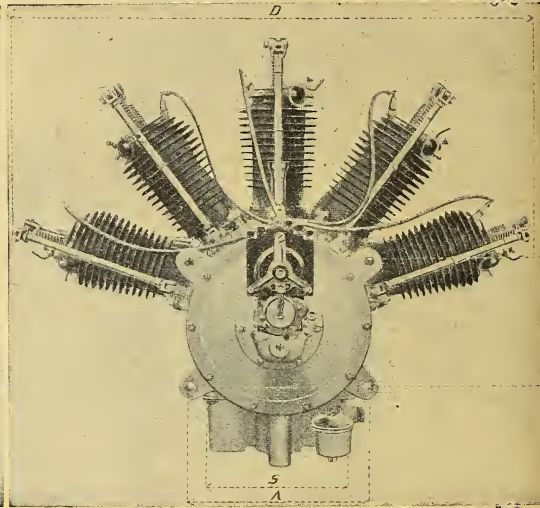
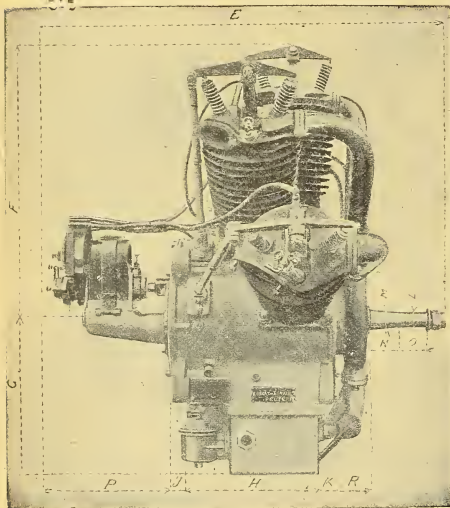


Mr. Herbert Spencer, ex-ballooningist and parachute record holder (with a drop of 7,000 ft.), but now one of our best biplane flyers. He is here shown starting one of his favourite banked turns near the enclosure at Brooklands, on his own-built biplane, one of the best of its type.

SMITHSONIAN INSTITUTION OCT 27 1961



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

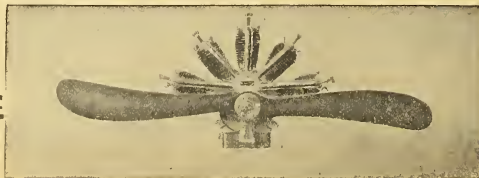
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	7.1"	33.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	3.9"	2.63"	9.84"	8.3"
60 H.P.	14.15"	10.25"	7.9"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	3.9"	3.62"	13.8"	9.1"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS...	483	NON-ROTARY ENGINES, BY W. O. MANNING	496
THE FRENCH MILITARY TESTS	486	THE FIXING OF BIPLANE FUSELAGES	497
AIR CURRENTS	488	CORRESPONDENCE	499
THE SPEED OF PLANES	490	THE VISITORS' LIST...	501
THE WEEK'S WORK...	491	MODEL CLUB NOTES	502

## Editorial Opinions.

More Pilots  
Wanted.

The weekly article by Mr. C. C. Turner in the *Observer* is always worth reading, even if one does not agree with it, for Mr. Turner is himself a certificated aviator, and has, therefore, the weight of experience to support his arguments.

Incidentally also he keeps fairly closely in touch with what is going on in the way of aviation, and is frequently seen at the flying grounds, which is, of course, quite exceptional for those who are usually accepted by the world at large as authorities on aviation.

Occasionally, however, one feels very much inclined to disagree with him, and never more so than when in a recent article, in which he wisely advocated the raising of the standard of efficiency to be required from an aviator, he deprecated the idea of having two separate classes of aviators. According to Mr. Turner, having two classes of aviators is going the wrong way to work, and no good will be done to aviation by merely increasing the number of pilots.

This from Mr. Turner is surely rather an heretical opinion, for if an increase in the number of pilots is of no advantage to aviation, why did he himself go to the inconvenience of getting his certificate? Surely it was in order that being a certificated aviator his words of wisdom might be accepted as being more worthy of belief than those of the mere groundling. The same argument applies equally well to those who are not journalists doling out their wisdom in weekly numbers to their thousands of eager readers.

The mere man who flies for the fun of flying also has his little following, and when he once becomes a certificated aviator he is an immensely more important person than he was when he was a mere pupil at the school. The pilot's certificate gives a man much the same superior status among those who are only casually connected with aviation that the B.A. degree gives among those with a slight degree of education.

Those who are "in the know," so to speak, are perfectly well aware that quite a number of good flyers are exceedingly ignorant on the subject of aviation, and there are quite a number of B.A.'s who are so ignorant on most subjects as to lead to the belief that the initials B.A. bear other interpretations than "Bachelor of Arts." Nevertheless the B.A. degree carried with it a certain *cachet*, and the pilot's certificate undoubtedly does likewise.

But, be it remembered, beyond the B.A. is the M.A. degree, which, if it does not indicate a much greater degree of learning in those universities where it is obtained merely by length of residence, does, at

any rate, imply greater experience of the manners and customs of universities. Incidentally and analogously, the superior certificate would imply greater experience of flying, it not actually deeper knowledge.

If Mr. Turner really meant what he wrote he would have us do away with degrees of all kinds, and there is nothing the average man loves so much as a few letters to put after his name; even Mr. Turner himself signs his articles as being by Charles C. Turner, C.A., the letters standing, in his case, for "Certified Aviator."

Therefore, by all means let us have a comparatively easy certificate as at present, which all men may pass without too much expenditure of time and trouble, so that they may speak with authority among their fellows, and spread the gospel of aviation. So that the test be sufficient to ensure the holders of certificates having a fair working knowledge of the aeroplane, and how to fly it, the more pilots the merrier, but certainly above and beyond this test let us have a really severe test which carries with it the guarantee that the man possessing it is really a trained flyer who has not only flown high and far, but who really has an intimate knowledge of his machine and all that pertains thereto.

Why an  
Age-Limit?

On another point the writer cordially disagrees with Mr. Turner, namely that of the age-limit for pilots. The Royal Aero Club is bringing forward a motion at the next meeting of the International Federation to reduce the age-limit for certificates from 18 to 17 years.

Mr. Turner says, "it is to be hoped that the Federation will take note that the British delegates do not in this matter represent British opinion. It may be argued, I think reasonably, that the age-limit should be raised to 24 or 25, as there is no justification for admitting boys to the rank of certificated pilots." Now it may be correct to argue that a young man under 25 is not fit for certain positions which call for mature judgment, but it is equally true that the majority of men never reach an age at which they are capable of coming to a sound decision on any subject, otherwise society as a whole would be considerably better than it is, and incidentally, aviation in this country would be considerably further advanced, and as a minor detail long suffering aviators would not be asked the foolish questions with which they are continually worried by presumably educated men who have apparently passed the age of discretion as laid down by Mr. Turner.

At any rate, the eye and nerve of a sturdy youth between 16 and 17 years of age is very often con-

siderably better and considerably more reliable than that of a man who has undergone another seven or eight years of the strain of modern civilisation. Let it be granted at once that a youth of that age is more likely to attempt reckless feats, but also let it be realised that, owing to the energy of youth, he is much more likely to carry them through without injury to himself or anyone else; and after all the possibility of doing a thing successfully is more than half the battle. For which reason a quite young man with unshaken nerves driving a racing car at over 100 miles an hour is probably much safer, both to himself and his fellow men, than a middle-aged man with shaken nerves driving a low-powered touring car slowly through London traffic.

As a matter of fact, if one could only obtain a census of motor car accidents it would probably be found that the very young men with the very fast cars are responsible for an astonishingly small number of accidents, considering the mileage they cover.

Certainly the certificate test should be made much more severe in the direction of finding out whether the candidate for a certificate really understands his machine, and what it is doing, but the actual flying test need not be more difficult than at present, and provided a youngster can pass both tests successfully, there is no reason why he should not be granted his certificate.

Mr. Turner says that the youth acts more upon impulse, and his desire to become a flyer is no proof of ability, whereas the man of 25 to 35 is not likely to take up aviation unless he has the makings of an aviator in him; and he is more likely to exercise caution.

Another way of looking at this matter is that the youth, acting purely upon impulse, takes up flying because he really wants to fly, and is, therefore, more likely to make a good flyer. On the other hand the man of 25 to 35 is more likely to take up flying with ulterior motives, such as merely making money, or advertising himself or his business, or purely for the sake of notoriety, and so may force himself to fly against his natural inclinations. Most people in close touch with aviation can point to men of this kind who have got their certificates, and yet are most dangerous and utterly unsafe flyers, both for themselves and anyone within their radius of activity.

As a further proof of the ability of youth in cases where nerve and judgment are necessary one need only consider the children in charge of torpedo boats, who are put there because no grown man's nerve could stand the strain of the conditions of life and the continual danger.

#### A Competition with Possibilities.

On October 18th there opened at the Velodrome d'Hiver, in Paris, a competition instituted by the French Ligue Nationale Aérienne, in which there are fifty-five exhibits, divided into four classes: (a) Shock absorbers which are part and parcel of the aeroplane; (b) Shock absorbers which are not part of the aeroplane; (c) Inventions to decrease the speed of falls (such fittings being part of the machine); and (d) Similar inventions, not part of the machine, i.e., parachutes, etc.

The L.N.A. is, in France, a body somewhat similar to what the Aerial League of Great Britain might have been if the men at the head of affairs had had a working knowledge of aviation.

The jury who will award the prizes consist of MM. Armengaud, jun., Ernest Archdeacon, Louis Paulhan, Lucien Chauvière, Lieut.-Col. Bouticaux, Commandant Lucas Girardville, Captain Marconnet, Commandant Paul Renard, and others. The gentlemen named certainly should be able to decide whether the exhibits are likely to be of practical use or not. It is interesting to note among them the name of Lucas Girardville, now a Commandant, who will be remembered as one of the three pupils, Girardville, Tissandier, and de Lambert, trained by the Wright Bros. when they first brought their machines to France, none of whom are now flying except the Comte de Lambert, and he only very occasionally.

#### The Invalids.

It is a pleasure to be able to note that both the victims of recent accidents are doing well. Mr. Chas. Hubert, though he will be in hospital for some weeks yet, is doing as well as can be expected, and is keeping bright and cheerful. He is always pleased to hear from his friends at St. Mary's Hospital, Paddington. Mr. Fisher, though only allowed to see a few very close friends, is able to recognise those who are admitted, and to ask intelligent questions, so the doctors expect an early and complete recovery.

#### A Good Idea.

An excellent proposal has been made that the profits from the aerial post should be devoted to form the nucleus of a benevolent fund for injured or distressed aviators. The idea is certainly worthy of very serious consideration, and it is to be hoped more will be heard about it when the promoters of the aerial post see fit to publish their balance sheet.

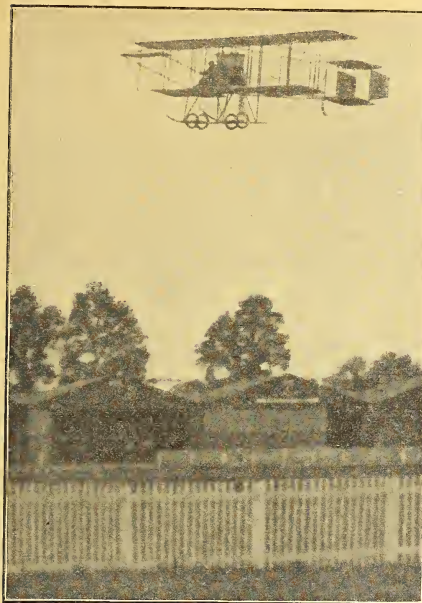
#### Belgian Military Aviation.

Belgium already has ten military aviators with International Certificates flying regularly. Our Air Battalion has still to reach that number.



Hamel starting from Hardelot for his Cross-Channel flight, when he reached Maidstone unobserved by watchers on the coast.





# E. N. V.

ALL BRITISH AVIATION MOTORS.  
**MANVILLE PRIZE of**  
**£500**

Brooklands Racing Season  
 Aggregate Prize of  
**£150**

Brooklands Duration Prize,  
 Oct. 4th.  
**£30**

All Won by C. Howard Pixton, Esq.,  
 using a 60 h.p.

# E. N. V.

Address all enquiries to—

**The E. N. V. Motor Syndicate, Ltd.,**  
 4, Hythe Road, Willesden, London, N.W.

## Special Offer of

# TWELVE <sup>35-h.p. GREEN</sup> 'Avro' Biplanes or Monoplanes

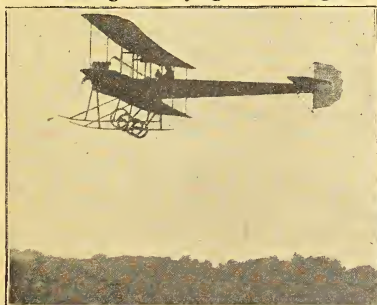
at **£400** each

Complete for Passenger carrying.

Regular Price £600.

### THE MACHINE

The "Avro" Biplane is admitted to be Britain's most successful aeroplane. More certificates have been won on the "Avro" than any other All-British machine. Flies faster with lower horse power than any other machine in the world.



### THE ENGINE

is the premier aero engine of British make. Unapproachable for reliability. The Green Engine was the only British Engine to finish the Circuit of Britain with all parts sealed and intact.

**THIS OFFER HOLDS GOOD TILL**  
 but will be withdrawn immediately twelve are sold

## November 30th

WRITE AT ONCE TO—

**A. V. ROE & CO.,**

The Aviators' Storehouse, BROWNSFIELD MILLS, MANCHESTER.  
 Telegrams: "Triplane." Telephone: 698 Central.



## The French Military Trials.

On the 16th, Fischer, on the Henry Farman, finished his landing tests, his previous attempt being cancelled because he landed on the way. Moineau, on the 100 h.p. Bréguet, also finished these tests.

In the afternoon the first speed tests were made over a course from Reims to Mourmelon and back, 60 kms. Barra, on a Maurice Farman, took 46 mins. (79.8 kms. per hour), and Renaux on another took 63 mins. 54 secs. (69 kms. per hour). Then Weymann, on the 100 h.p. Nieuport, showed the superiority of the machine designed to diminish head resistance by covering the distance in 33 mins. 14 secs. (109 kms. per hour).

Colliex, on the Canard-Voisin, finished the official flights of the day by making his first successful landing test at Montcornet. During the day Gaudard brought out the Paulhan "torpedo" and made it fly.

In connection with Weymann's tests it is worthy of note that he alone of all the competitors up to this date restarted from the field at Montcornet without any outside assistance, allowing no one to handle the machine except his two mechanics who travelled with him as passengers. One held the machine back while the other swung the propeller, and then both climbed in while Weymann kept the engine throttled down. Such a test as this is certainly a proof of the machine's practical utility for military work when in the hands of a skilled pilot.

Tuesday, the 17th, was another day of triumph for the Nieuport, Weymann passing his altitude tests with great success. In order to qualify the machine had to reach 500 metres, roughly 1,630 ft., inside fifteen minutes, carrying three people and the full load of petrol and oil. Weymann at the first attempt got up to 520 metres, or about 1,700 ft., in eleven mins., and next time went up to 550 metres, about 1,790 feet, in ten minutes. Afterwards Barra, on the Maurice Farman, took seventeen minutes to reach 500 metres, so his test was declared void.

Late in the evening Moineau, on the Bréguet, passed his speed test, but had not done the height tests. Weymann was thus the first of the competitors to complete all the qualifying tests. There seems to be nothing else in the competition to beat him for speed over the long-distance speed tests, and, barring accidents, he should be the winner.

The 18th was a better day than usual, and, in the morning, Fischer, on the Henry Farman, went for the speed test, covering the distance in 42 mins. 32 secs. (92 kms. per hour). On his return it was reported that the trial was void owing to his having carried less than the regulation load of petrol, but the test was ultimately ratified. Soon after Renaux tried for the altitude test, but took 20 mins. to reach 370 metres. Barra then tried, and, according to his private altimeter, reached 520 metres in 13 mins., but the official recording machine went wrong and the test was declared void. During the day Moineau, this time on the 140 h.p. Bréguet, went for the first landing test, but was brought down by gusts in the valley by Neufchatel. Later in the day he made another attempt, and succeeded admirably.

Gaubert, on the Astra biplane, and Frantz, on the Savary, with a Labor engine, each passed their first landing test.

On the 19th the only successful official flight of the day was made by Fischer on the "staggered" Farman, who got up to 500 metres in 11 mins. 55 secs. Later on Moineau tried for altitude on the Bréguet, but at 85 metres he was forced to come down by the wind which had risen at midday. Bréguet and Martin did some good tests with full load on the Bréguet

with the 75 h.p. Chenu. Gabriel Espanet, a new pilot, did some good flying with passengers on a Nieuport, and Fournier, another newcomer, put up a good performance on a Nieuport single-seater with a 20 h.p. Darracq engine, finally flying from the camp to Reims and back, and remaining in the air for thirty minutes. Vidart was also out testing a new Deperdussin.

The military committee debated whether, owing to the objections of several constructors, the course for the final classification should be from Reims to Chalons and back, instead of Reims to Amiens and back. The former course will have to be covered at least three times to make up the distance, but it is vastly easier, being all over flat, open country, whereas the other is along river valleys the whole way, is much wooded, and has fairly high hills alongside. On the other hand the Chalons course is not nearly such a good test of the stability of the machines if there should be any wind, as the big plains of the Champagne always give a steady breeze.

Early on the 20th the official trials commenced again. Gaubert, on the Avro-type Astra, went for his second landing test, and succeeded excellently, with his two passengers and a full load. Frantz, on the Savary, also passed his second test. Renaux then passed the first height test on the Maurice Farman, getting up to 500 metres in 13 mins., but put off his second trial on account of the rising wind. In the afternoon Barra tried on the other Maurice Farman, and got up to 340 metres in 12 mins., but had to come down because of wind.

There was plenty of unofficial testing. Bréguet was out on the Bréguet with the Salmson-Canton-Unné engine; Mahieu flew his Voisin; Dubreuil took up his two passengers and full load; Colliex had out the Voisin-Canard with a 140 h.p. engine; Prevost on the Deperdussin and Ladougue on the Goupy were flying well. Goffin took up the Astra triplane, with a 75 h.p. Renault, and showed it could fly quite well; and Labouret flew the Astra biplane. Gougenheim arrived from Mourmelon on the repaired Henry Farman which he broke up the previous week. The 140 h.p. Blériot also appeared again, this time piloted by Desparmet, and flying quite well.

The 21st, Saturday, was apparently as bad a day at Reims as it was in England, and no successful official flights were possible. Early in the morning Renaux, on the Maurice Farman, went out for his second height test, and is reported to have reached 498 metres when his 15 minutes expired. To have failed by two metres sounds pathetic, but one would particularly like to see the aneroid which would register accurately to within ten metres, let alone two. This is so well recognised that records are not passed by the International Federation unless they show an improvement of at least 50 metres on the previous best, and thus show the result beyond dispute.

Half an hour later Moineau, on the Bréguet, tried for his first height test, but at 200 metres found the wind so bad that he had to come down, as did Barra on the other Farman. Bréguet, making an unofficial test, declared it to be impossible to get past the 200 metres. During the morning Hermann, on a new Pivot monoplane with a 70 h.p. engine, arrived from Mourmelon, and reported that he had come over in nine minutes, not bad time for 30 kms., or about 18 miles. Afterwards he, Bouvier on the Goupy, and Didier on a Maurice Farman, fitted with a Doutre automatic stabiliser, did some fancy flying in a 28-mile-an-hour wind, though on the big plain at Reims that is no worse than a 15-mile-an-hour wind at Brooklands or Hendon.

On Sunday rain and wind prevented any attempt to fly.



The "front row" at Brooklands, showing the "Blue Bird" and the passengers' booking office, with the new fencing.

BRITISH MICHELIN CUP THREE TIMES WON WITH A

# Green All-British Aero Engine

Mr. S. F. Cody has, for the third time in succession, won this famous trophy with the aid of a Green Engine. This is proof positive (if such be needed) that the Green is unapproachable for reliability and efficiency. As Mr Cody says, "If the Green Engine is supplied from without with fuel and oil, there is sufficient from within it to take you through."

Full particulars on request—

**The Green Engine Co.,**

Sole Licences under Green's Motor Patent Syndicate Ltd.,  
55, Berners Street, London, W.

Makers for the Patentees: THE ASTER ENGINEERING Co., LTD.



## HOWARD T. WRIGHT,

110, HIGH STREET, MANCHESTER SQUARE, W.

Telephone—8574 Gerrard.

**WINNER OF DE FOREST PRIZE.**

Eight Types.

**Monoplanes**

from 40 to 80  
miles per hour

**Biplanes ::**

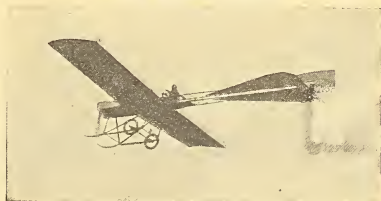
from 36 to 50  
miles per hour

CATALOGUE ON APPLICATION.



## THE "DEPERDUSSIN" MONOPLANE

"The Aerial Yacht."



Single Seater Complete from £450 and upwards.

Passenger Flights—Cross Country Journeys  
on our 2-Seater Deperdussin Monoplane  
from Brooklands Aerodrome.  
The Best Passenger Carrying Monoplane.

### AVIATION SCHOOL AT BROOKLANDS.

Special terms to Army and Navy Officers.

Full particulars from

THE BRITISH DEPERDUSSIN AEROPLANE SYND., Ltd.,  
30, Regent Street, Piccadilly Circus, LONDON, S.W.  
Phone: 280 GERRARD. Wire: "MONODEP, LONDON."

## MULLINER

LONG ACRE, LONDON, &  
NORTHAMPTON, LTD.

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

**AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.**

Sole Agents for **NORMALE PROPELLERS**

The Most Efficient  
Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race, the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA.

TELEGRAMS: "AEROCRAFT," LONDON.

## E. T. WILLOWS . LTD.

"City of Cardiff" Type, to carry 4, £900 complete.

New Light 2-Passenger Model - - £370 "

4-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM

STOCK  
DIRIGIBLES





## AIR CURRENTS.

## The Philosopher Speaketh

EXTRACT FROM THE WRITINGS OF FAKRASH-EL-AMASH.

(Translated, more or less, by F. A. G.)

"Flying," said the Philosopher, "is a thing so uncontestedly new in man's experience that it may be well to ask whether the philosophy and maxims which have been applied to man's life hitherto on the earth may be as well applied to his life in the air.

"I contend that this is not so.

"That nothing is new under the sun (for instance) hath been true hitherto, perhaps, but with the advent of mechanical flight it is no longer.

"It were well to overhaul a few maxims and see whether it be not even as I say—that flight demandeth a new philosophy.

"There be some maxims which may still stand. For example, he who mounteth on aeroplane wings for the first time may well feel the truth of the old saying, 'One's enough'; while, when again he mounteth aloft, he will exclaim: 'But two's too few!'

"Let us imagine that, prompted by this newly aroused enthusiasm, he joineth a flying school. If he payeth not the attention to small things advised by the old saw, and refraineth from being 'air wise,' he will find himself 'ground foolish.'

"It is no longer of use to tell him to take care of the pence, etc. He needs must 'take care of the planes,' leaving the passengers to take care of themselves.

"It is very desirable that the pilot should be Just and Fear not (and if he be just in assessing his fee he will have no reason to fear he will not get it); but this concerneth the passenger's pocket alone. The pilot aviator must 'be just in time,' and he need not then fear for the security of either his passenger or his fee.

"It is never too late—once applied, but does so no more. So soon as the aviator leaveth the ground it always is too late to mend.

"The new maxim standeth: 'It is Frequently too late to mend.'

\* \* \* \* \*

"To the Pilot Aviator:—

"There is many a *remou*, my son, 'twixt *vol plané* and *atterrissage*; and a skid and wheel combination on the level is worth two in a bush.

"Remember thou that 'he who wants the last drop' (figuratively speaking) usually gets the first; but when passengers from the War Office fall out Mother Earth comes by her own. . . .

"It is no use carrying coils to Newcastle' (saith the sage) or anywhere else by aeroplane.

"Tis an ill wind, my son, that bloweth at 6 o'clock, but remember thou that to-morrow is also a day.

\* \* \* \* \*

"Tis a wise aeroplane (continued the Philosopher) that knows its own designer. When building an aeroplane the trouble is usually not with the design, but with somebody who calls himself the designer and produces patents. This is not so with dirigibles, for if you accidentally plagiarise another's invention you say, 'Lo! this is my invention,' the original patentees will probably not demur.

"When building a dirigible (unless under special Government contract) care should be taken to endeavour to avoid the not necessarily evitable contingency of the ship being spoilt for the want of a ha'porth of tar, for the road to Carey Street is paved with good inventions, and Invention is the mother of Necessity, and the Government the father. . . ."

[Here the manuscript discontinues with a suddenness which seems to imply the arrival of an inventor to interview the Philosopher.—Ed.]

\* \* \* \* \*

ANOTHER ILLUSION DESTROYED.—The famous aviator had just met the pretty lady, but she had not caught his name. And they talked awhile mostly about himself. She knew all his deeds and some of his misdeeds, and said she had lots of photographs of him. Then, magnanimously, he broke it to her gently that he was himself. "Oh, no, you're not," said she. "You seem to know him quite well, and perhaps you've been in an aeroplane with him. But you're much too young, and you're not a bit like his photographs." Not even the production of his motor licence would convince her, and now he is wondering whether he can sue all the illustrated papers for libel.

OVERHEARD AT HENDON.—Two dear old ladies at Hendon, enraptured at seeing an aeroplane flying for the first time, watched Mr. Parke's circuits, craning their necks dangerously to keep the machine in sight. On coming back to earth again, they found themselves confronted by a new Valkyrie, with its cylindrical petrol and oil tanks all nice and new and shiny. "Oh," one of them was heard to remark to the other, "I like that one the best; look at the dear little cannons on top of it."

\* \* \* \* \*

Mr. Herbert Spencer wishes it to be known that if the souvenir hunter who recently collected his flying gloves of his machine at Brooklands, while he was resting between flights, will call at shed No. 16 he can have the woolly cap and coat that goes with them, and so set up a complete aviator's kit.

\* \* \* \* \*

The pilot-instructor was immensely proud of the progress his pupils were making, and, turning to the critic, he remarked, "Don't you think they are coming along finely, thanks to my tuition?" Said the critic, "Humph! I should say it was thanks to their intuition."

## Great Thoughts.

"... In fact, to such a pitch has the science of aviation now advanced that many aviators have actually complained of boredom during cross-country flights."—Translation from an article in *L'Aviation Illustrée*.

"Bored? I should just think so," exclaimed Mr. Egbert Lareine, the well-known aviator, with a lugubrious smile. "Many and many a time have I been seized with the most piquant ennui imaginable. I remember on one occasion when I flew from Haslar out to the Needles, driven almost crazy by monotony, I commenced to walk up and down the machine rehearsing my part in a forthcoming play.

"So engrossed was I in thinking out a roguish design for my new iron curtain that I stepped right over the edge into vapour!"

"However, by blowing out my cheeks I was able to float in space for a second or two, which, fortunately, gave me time in which to pull myself up again by the skids of the machine as it came throbbing by. Unpleasant? Well, not more so than stepping on a tin-tack in the bath!"

"Yes, I must admit I used to find flying very tedious," was Mrs. Howyett's reply to our commissioner's query. "So that now I never dream of making a flight without my cross-stitch."

"Yesterday evening I drove home the last stitch in a table-centre as I was 400 ft. above the sewage farm, and had actually started on an all-wool altar-cloth with tatting insertions for Weybridge Cathedral before the light failed and compelled me to descend. A pity? Yes, wasn't it? But then we all have our little disappointments, and I mustn't pick my eyes out in the dark, must I?"

"*Chacun à son goût*, to use a Portuguese expression," exclaimed Mr. Jag. Rudeley, vaulting nimbly over the handlebars of his gullswing monoplane.

Speaking for myself, however, my whole ego, from tall hat to side-spring boots, my absolute being, my entire hyper-sensitive subliminal self, calls out yearningly for solemn music on the Jew's harp to while away the monotony of a cross-country flight.

"Difficult to play when flying? By no means. I invariably wear a pair of sharp-pointed French boots and find that not only have I the most complete mastery over my instrument, but the *fimbre* is such as will satisfy the most exacting of æsthetic demands. Ah, the sinuous, languorous note of the Hebrew's lyre! What memories it conjures up! How the blood runs riot! But enough of idle words; and now, if you will excuse me, I must run away and put a lamp wick in my bicycle lamp.

"Yes, it does look remarkably stormy yonder, does it not? If it rains we shall have wet, I fear. Mind the loose stair-rod. Good morning!"

"Yes, indeed, I sometimes feel that the drear monotony of the thing will drive me into a madhouse," ejaculated Mr. Gignmore, petulantly throwing down his favourite standard work, *My Gifts to the Air Battalion, or What I Have Done for the Nation*, by the Marquis of Westminster. "Now, though, that Damages have sent my pokerwork outfit I—"

[This is ample, thanks.—Ed., THE AEROPLANE.]

H. M. M.



# AVIATION ACCESSORIES

Aneroids, from	-	-	-	-	£3	5	0
Do. with maximum hand	-	-	-	-	7	7	0
Do. combined with watch	-	-	-	-	3	10	0
Revolution Counters, aluminium	-	-	-	-	6	6	0
Do. do. brass	-	-	-	-	5	5	0
Clift's Compasses	-	-	-	-	10	10	0
Safety Belts, from	-	-	-	-	1	5	0
Helmets, from	-	-	-	-	1	5	0

**The Universal Aviation Co., Ltd.,**  
**166, Piccadilly, W.**

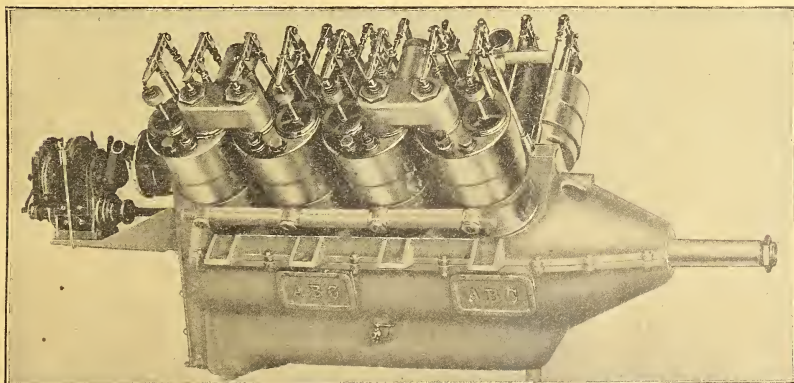
Telephone:  
 3504 Mayfair.

Telegrams:  
 "Birding, London."

## A. B. C. AEROPLANE ENGINES

Manufactured by the All - British (Engine) Co., Ltd.

40-h.p. 4-Cyl. Vertical, £275;      80-h.p. 8-Cyl. "V" Type, £450.  
 (A 120-h.p. 12-Cyl. "V" Type, £675).      Under 3 lbs. per B.H.P.



**London Agents:** The Universal Aviation Co., Ltd., 166, Piccadilly, W.

## The Speed of Aeroplanes.

THE AEROPLANE has lately received from a correspondent a letter, in which he says: "Can you or anyone else tell me how the speed of an aeroplane can be estimated?"

This matter, of course, depends largely on the amount of knowledge which one possesses of the machine. If, for example, the owner of a machine desires to know how fast it will fly, it is practically indispensable to have some idea of what power is likely to be put into it, although it is possible to get a rough approximation without this knowledge. If the writer observed a machine to have a given weight and surface, he would set about it in this way. Being inclined to mathematics, he would use the fundamental formula:—

$$V = \frac{CL}{A}$$

where  $V$ =velocity in m.p.h.

$L$ =weight of machine with pilot and fuel, measured in pounds.

$A$ =area of planes in square feet.

$C$ =something in the neighbourhood of 700 or 800.

This  $C$  is a constant quantity, comprising the lifting coefficient of the planes (also known as " $K$ ") and also the angle of incidence, and it is fairly safe for practical purposes to assume that these do not vary very much as between one present-day machine with another, although there are certain machines which come as brilliant exceptions, such as the Nieuport, etc.

Having arrived at this value of the velocity, the next thing is to find the required thrust, and a fairly sound figure for this is in the neighbourhood of two-fifths or one-third of the weight. If this thrust is multiplied by the velocity and divided by the figure 375, we arrive at the horse-power necessary to propel the machine at that speed.

To those who are acquainted with horse-power calculations the figure 375 may be puzzling. As a matter of fact horse-power is equal to pounds of thrust multiplied by feet per second of velocity and divided by 550 (the number of foot pounds per second in one h.p.). Now if the velocity is measured in miles per hour the same speed is expressed by a lower figure, seeing that 15 m.p.h. is equal to 22 feet per second. To make the calculation correct, then, when the units are changed, it is necessary to alter the constant in the opposite direction. In this particular case we changed from feet per second to miles per hour, and the figure expressing the velocity is multiplied by 15/22, therefore we multiply the constant by 22/15. It will be found that 1/550 (the original constant) multiplied by 22/15 equals 1/375.

This method of calculation is, of course, very approximate indeed, and cannot be expected to give results nearer than within 10 m.p.h., although in the case of normal machines it is usually much nearer than that. If beside the previous information he also possessed particulars as to the h.p. of the engine the procedure is somewhat different. The formulae to use are ridiculously simple, and as the way in which they are arrived at is rather interesting, I reproduce it for those whom it interests.

Our known figures are:—

$W$ =weight in pounds.

$h.p.$  in ordinary units.

$A$ =wing surface in square feet.

$K$ =lifting value of plane, a sound value being 1/150

$\alpha$ =angle of incidence (unknown).

$V$ =velocity of miles per hour (unknown).

Now we know that  $W=KA\alpha V^2$ . The thrust equals the weight divided by the angle of incidence; or

$$T = KA\alpha^2 V^2$$

and the h.p. is equal to the thrust multiplied by the velocity and divided by 375; or

$$h.p. = \frac{K A \alpha^2 V^3}{375}$$

Now, these formulae by themselves lead us nowhere, since in each there are several unknowns; but by a little manipulation the problem becomes simple. First let us divide the weight by the surface. This will give us a figure, and on looking at the right-hand side of the above equations we see that

$$\frac{W}{A} = K\alpha V^2$$

Now divide the h.p. by the weight and multiply by 375. Again studying the equations we see that

$$\frac{375 \times h.p.}{W} = \alpha V$$

Now, taking our value of  $W/A$  and dividing that by our  $375 \times h.p./W$  we obtain  $K \times V$ . Now we know  $K$  within a small margin of error; hence we can find  $V$ , and by dividing our value of  $375 \times h.p./W$  by  $V$  we obtain  $\alpha$ . Having  $\alpha$  and  $V$ , we can, by the original formulae, find h.p. and the thrust, and hence the problem is solved.

It must be noted that the h.p. here is that part of the power actually used in lifting the machine. This, of course, is much less than the h.p. of the engine. It is for practical purposes sufficiently accurate to take this as half the engine h.p. in any machine flying at 60 m.p.h. or less. Above this speed the engine h.p. must be more than twice the power actually used.

For those who do not care to follow out the above investigation I repeat it in the form of simple instructions for practical purposes.

Being given the weight, the surface, and the engine horse-power, multiply the weight by itself, divide it by the surface, divide by half the horse-power, and multiply the result by 2/5. The answer will be velocity in miles per hour. Now start afresh by multiplying half the horse-power by 375 and dividing by the weight and then by the speed. The result will give the angle of incidence in the form of a fraction, as, for example, 1 in 5, 1 in 6, or some value in that neighbourhood.

The necessary thrust is arrived at by multiplying the weight by twice this fraction.

This more or less completes the subject of speed calculation, and, having arrived at this point, it may be interesting to extend the matter a little further and get some rough idea of the necessary dimensions of the propeller.

Looking at the matter as before, first as an interesting investigation, we work from the formula for pressure on a normal surface, because for the rough investigation of propeller pitch, etc., one may regard the thrust as being the pressure on a surface equal to the disc area, multiplied by a constant, the velocity of the current being that due to the slip stream; or, rewriting our equation, if  $T$ =thrust in lbs.,

$$T = .12 V^2 A$$

where  $A$ =disc area =  $\frac{\pi D^2}{4}$  ( $D$  being diameter of the propeller)

and  $v$ =slip stream.

Using this value of  $A$ , we have

$$v^2 = \frac{4 T}{.12 \pi D^2}$$

or

$$v = \frac{10 \sqrt{T}}{D}$$

Now the pitch, multiplied by the propeller revolutions, obviously equals the machine velocity plus the propeller slip, or

$$P = \frac{V + v}{n}$$

where  $n$ =revolutions per second of propeller. So that knowing the thrust required and the diameter of propeller which can be put on to the machine, one can specify the pitch of the propeller, and it is then an advanced propeller designer's task to make his propeller to that pitch, with such a blade area that it absorbs the h.p. at the revolutions.

Again, putting the matter into practical rule of thumb, we have the following:—

Given the thrust and the diameter for which there is room, find the square root of the thrust, multiply it by 10, and divide by the diameter, and the result is the slip velocity in miles per hour. Add this to the machine's velocity, divide the sum by the full load revolutions per second of the engine (as specified by the makers), or, if gearing is used, by the desired revolutions of the propeller, and the result is the pitch.

The width of the blades and their shape is entirely a matter for a firm of propeller designers.

To those who have studied this question already the author would apologise for having clothed two or three very simple propositions in a cloud of verbiage which recalls Lord Beaconsfield's famous description of his rival as "a sophisticated politician inebriated by the exuberance of his own verbosity." But although these things are simplicity itself to those who know them, it is very hard for the non-mathematical mind to follow a train of reasoning expressed simply in formulae without explanation.



## The Week's Work.

## Monday, Octob. 16th.

**BROOKLANDS.**—Fleming out on Bristol in morning, but too gusty for pupils.

**GLOUCESTER.**—B. C. Hucks, refraining from having hard-worked Blackburn done up, moved to Gloucester and settled down for exhibition work on the Port-ham, machine having previously been on view at Norton's, in Westgate Street. As usual, a fine collection of "hedge tickets," but a fair paying crowd as well. Official reception by Mayor and Corporation at 3 p.m. In spite of nasty wind Hucks made 6 min. flight, and, soon after, a short flight close to ground, wind getting very bad. Local "nut," much impressed, heard to remark, "Fore beggah! Fancey having to get his living flying round and round like a bally dicky bird."

**THE PLAIN.**—Tremendous gale blowing all day. No flying possible.

**FILEY.**—Scott out doing good rolling practice for about two hours on Blackburn and shaping well.

**LIVERPOOL AVIATION SCHOOL.**—Very little practice last week on account of wind and fog, but plenty of interesting work going on in hangars, wing building, etc., also testing different propellers for thrust on school Blériot outside. Mr. Melly was out early for few minutes testing weather conditions, but decided it was too puffy for pupils.

## Tuesday, October 17th.

**BROOKLANDS.**—Nothing doing in morning. In evening Fleming up with Capt. Harrison for short flights demonstrating starting and landing. Afterwards up with Harrison in driving seat making long hops.

**HUNTINGDON.**—Moorhouse, on Blériot, left for Northampton, there to pick up cargo of boots as advertisement for enterprising manufacturer.

**GLOUCESTER.**—Blackburn monoplane with Hucks on board doing well. First flight lasted sixteen minutes, during which he reached 1,000 ft., and is alleged to have flown over the city, but confirmation of this is needed. Later made two shorter flights of about five minutes each. Only cd. charged for admission, but crowd not large.

**THE PLAIN.**—Wind continued all day, but in evening Busted and Jullerot went up and found things rather too bad for pupils' solo flying. Busted, however, took Dacre for passenger flight, but nothing further was possible.

## Wednesday, October 18th.

**BROOKLANDS.**—Fleming out for trial on Bristol 65 and afterwards on No. 29, Pixton's Manville Prize-winner, now being tried with a rotary engine. Then up with Capt. Harrison teaching hand control. Afterwards Harrison out alone making good straight flights with excellent landings. Lieut. Harford then out, but only doing straight flights because of fog. In afternoon Pizey out with Slater, late of Salisbury School, for tuition flight, and, later, with Harford. Afterwards Fleming giving first lesson to Mr. Roberts, a new pupil, and then with Slater. Pizey then up with Roberts as passenger. At dusk Pizey and Fleming each took a machine out for short final test flight. Mrs. Hewlett out on Blondau-Farman. Lieut. Hewlett, R.N., then taking charge and shaping well. Raynham on Avro with 40 h.p. Green, testing machine for long-distance Michelin flights. Carrying 24 gals. of petrol and lifting nicely. Supply enough for nearly eight hours' flying.

**CRICKLEWOOD.**—Compton Paterson testing new biplane of own construction, flying well along shores of Welsh Harp, when petrol pipe suddenly choked and stopped engine. Machine glided down excellently, but just failed to clear a fence, so alighted on top of it. Being of Curtiss type, the longitudinals between wheels held machine up and saved rest of machine except propeller, which hit fence, and forward elevator, which Paterson took with him as he was projected forward from his seat in front of engine. Except for slight bruises from elevator, pilot fortunately unharmed.

**HIXDON.**—Hopkins and Morris, of Chantery School, out rolling, both showing much improved form. De Villiers rolling and straight flights. Lieut. Parke, R.N., flying Grahame-White biplane carrying passengers, amongst others Miss Moorhouse, who was awaiting her brother's arrival from Northampton with his load of boots. Mrs. Stocks doing circuits and figures of eight in usual fine form. Later Lieut. Parke out for cross-country flight to Wormwood Scrubbs, visiting Compton Paterson's accident by the Welsh Harp on the way. Got lost in fog returning and found himself at Harrow, so had to land again about two miles from Hendon to inquire way. Wilson, Prensliell, Sacchi, and Allen flying straight lines on Blériots. Salmest also out testing Blériot flown by de Conneau at Védrières' benefit at Hendon. Barber out at



The Deperdussin two-seater "en vol plané."

4.30 p.m. and made several circuits on Valkyrie 10, reaching 500 ft. and terminating with a fine *vol plané*. Then Capt. Loraine out on school Valkyrie and made several circuits at good altitude in spite of anemometer registering a gusty 10 m.p.h. Later Barber took up a passenger for several circuits and then flew school machine high up, where he completely stopped his engine and landed faultlessly *en vol plané*.

**NORTHAMPTON.**—Moorhouse on Blériot left for London carrying fifty pairs of boots, weighing roughly, including packing, 4 lbs. per pair. 200 lbs. no light load on single-seater Blériot. Boots stowed all over machine; boots to the right of him, boots to the left of him, under seat, in fuselage, at back, and anywhere else they would go. Remark that machine flew a little tail-down and tried to climb all the time. However, got along all right to Blechley, and there came down owing to fog and stayed the night.

**THE PLAIN.**—Gale still blowing. Busted up with Dacre, but wind prevented anything else being done in morning. In afternoon there were signs of calm, and Jullerot having made trial, Lieut. Cross was sent for brevét tests, which he passed. Lieut. Cross joined school on September 6th and was ready to pass tests some days ago, but tempest of last few days made it impossible. Tuition has, therefore, lasted about five weeks, amongst which there have been many days on which flying was not possible. Lieut. Cross went through his tuition without a smash. No further flying possible on account of thick mist, and nothing doing rest of week owing to gales.

**FILEY.**—Scott out for about half an hour doing straight runs with tail well up, but did not attempt to lift owing to wind being too strong.

**LIVERPOOL AVIATION SCHOOL.**—W. Lawrence Hardman out rolling, intending to try straight flight, but darkness and mist came on suddenly and put an end to day's work. Two-seater Blériot is quite ready again, and Mr. Melly only waiting for suitable weather to continue his cross-country flying and to take out pupils for tuition on it.

## Thursday, October 19th.

**BROOKLANDS.**—In morning Fleming doing tests, and in



afternoon, weather not improving much, took Capt. Harrison for tuition. Later Harrison in driving seat. Then Lieut. Harford out alone making very good landing. Harrison then doing straights alone with good landings, but, taxi-ing round too sharply near Paddock to avoid a post, wrenched off a wheel, broke a skid-strut away from socket, which, falling into propeller, damaged it badly. Raynham on Avro-Green started for Michelin Prize in spite of fog, but, after a few minutes' flying, came down with magneto trouble. Spencer, flying in evening, collided with a bat, which hit elevator, covering his passenger, Ballard, with blood, and then fell into propeller, knocking a piece out of it. Deperdussin School out morning and evening. Came doing excellently on brevet machine. Sabelli on taxi fell into sewage farm and broke machine rather considerably. Bell out on two-seater for a while with Baldwin and other pupils. Walton-Edwards Colossoplane also out flying curves.

HENDON.—De Villiers and Hopkins, of Chanter School, rolling. Latter, owing to mist on ground, fell into draining trench, covers of which had been carelessly taken off and left alongside. Machine rather badly wrecked, but, luckily, Hopkins not hurt. Lieut. Parke, R.N., acting as honorary instructor on Grahame-White biplane in spite of foggy weather. Moorhouse arrived from Bletchley with Blériot full of boots. Strong wind blowing at time, but Moorhouse apparently not discommoded by load. Wilson, Prensili, Sacchi, with the addition of Allen and Tremlett, making straight flights and showing remarkable progress. Salmel, now an instructor at Blériot School, again made several beautiful test flights on "Beaumont's" Blériot. This machine, soon to be taken over by Driver, for his part of the Compton Paterson-Driver-Livingstone scheme. Salmel also out on own machine trying several new kinds of propellers. At 7 a.m. Valkyrie school pilot and Capt. Loraine flying school machine, each making short flights during temporary lull in wind. At 3.30 p.m. Capt. Loraine out again flying circuits in fine style. Later, Barber up on same machine, but heavy rain made lengthy flight impossible, and gales stopped flying rest of week.

GLOUCESTER.—Despite wind and wet, Hucks on Blackburn went out to oblige early closing day crowd, and, having promised to fly over Gloucester Carriage and Wagon Works at 1.30 p.m. when men were coming out, loyally kept his word, being loudly cheered by the workpeople. Wind getting worse, Hucks only did short flights later, including some "bomb-dropping" tests.

**Friday, October 20th.**

BROOKLANDS.—Nothing doing. Very gusty and wet all day.

GLOUCESTER.—Flying impossible, so Hucks turned lecturer, giving information at Con. Exchange to highly satisfied audience consisting of boys from Crypt Grammar School and Rich's School, as well as to fifty girls from Endowed School.

LANARK.—Owing to inclement weather throughout last week unfortunately little to record, but pupils found plenty doing in hangars, where their energies were centred on strengthening of school Blériot so that it may be able to stand severe landing without damage. In afternoon, however, short-lived calm enabled Jackson to get in a little practice on Deperdussin, but wind again springing up put an end to further flying.—H. O. WALSH.

**Saturday, October 21st.**

BROOKLANDS.—No flying. Full gale blowing in gusts.

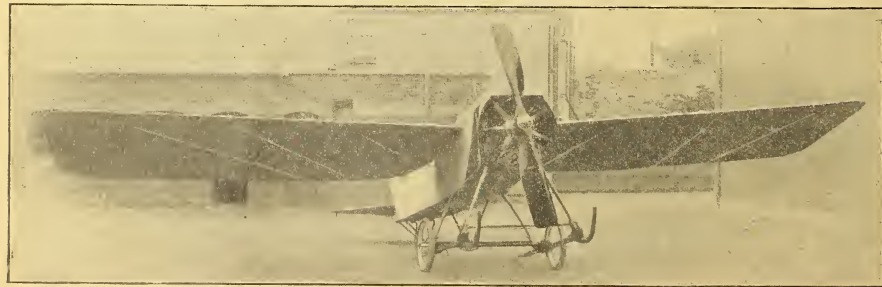


Sir George White, head and founder of the Bristol Co., talking to Mr. D. Graham Gilmour, his most experienced pilot, about the new monoplane.

Record gust shown on anemometer ran straight up from 9½ m.p.h. to 41 m.p.h. in less than a minute. Late in afternoon official visit paid to sheds by Graduates' Society of Institute of Mechanical Engineers. Visitors much interested, but, owing to late arrival, only able to inspect Bristol, Flanders, Howard-Wright, Universal, Deperdussin, and Avro sheds.

**Sunday, October 22nd.**

BROOKLANDS.—Gale worse than ever, and heavy rain at intervals. New racing Deperdussin, now assembled, is one of the prettiest monoplanes yet seen. Fitted with 35-40 h.p. three-cylinder Anzani right outside front of fuselage, as in two-seater. Tanks close up behind it and pilot close behind that, so that rudder-bar is underneath tanks a few inches behind crank-case of engine, thus getting all weights close up to centre of pressure and making machine very handy on controls. Flanders, Howard-Wright, Birdling, and Avro all ready to go for long-distance Michelin Cup, and only waiting for decent weather. Martin-Handasyde approaching completion.



Front view of the Bristol two-seater. Note the "wash in" at the wing-tips.

**Mr. Morison Takes a Holiday**

After practically eighteen months' hard flying Mr. O. C. Morison is about to take a holiday, and intends to have a few months' big game shooting in British East Africa. Everyone will wish him a good time and the best of sport, for he really deserves a holiday, but it is a pity he is leaving England just now, when we can do with more fliers of his calibre, to show that, although there are no competitors to go for, our aviators will still fly.

Mr. Morison has a way of doing really remarkable flights just when things are dull and no one expects anything to happen; only, unfortunately, he does not care about advertising himself, and, consequently, comparatively few people know how good he really is. His flight from Paris to Brighton was hardly noticed by the general Press. His 100-mile-an-hour flight from Hendon to Brooklands attracted far less attention than if an unknown Frenchman had done less and had got it wired to the British papers. His first Brooklands to Brighton flight, a wonderful performance at the time, was never boomed as it would have been if one of the halfpenny paper idols had done it. Some of his best flights, such as Brooklands to Huntingdon, Huntingdon to Maidenhead, and others, have not even become known to the technical Press for days after they happened.

Only at Shoreham is Mr. Morison recognised as the magnificent flyer he really is, and there he is most deservedly popular; but only because of his deeds, for he is no talker at any time.

He has had harder luck in the way of smashes, has had more wonderful escapes, and has probably spent more money on flying as an amateur, in the true sense of the word, than any other man who is flying to-day.

Altogether, he thoroughly deserves his holiday, much as his cheery presence will be missed by us who have to spend our uncomfortable winter in England. Good luck and good hunting to him.

**The Train Monoplane.**

The many people in this country who admired the splendid lone-hand fight put up by M. Train in the European Circuit, in which, entirely unaided, he got as far as Shoreham when the leaders were at Hendon, will be interested to hear that he has arranged for the Astra Company to build his machines in future. The Astra Company, which is the French Wright Company, which is Baron Henri Deutsch de la Meurthe, can, of course, give him the financial and mechanical backing he has lacked hitherto, so his cleverly built all-steel machine should now have a chance of doing itself justice.

**Mr. Lanchester in Practice.**

Many readers of *THE AEROPLANE* will recollect that some time ago an extremely clever radial engine was being built as an experiment by the Daimler Company, of Coventry, to the designs of Mr. F. W. Lanchester. At approximately the same time an all-metal aeroplane was also being built to Mr. Lanchester's designs, the machine being constructed to carry two radial engines driving independent propellers. This machine was started something over a year ago, but was never brought into the fierce light of publicity. It is, however, reported on fairly good authority, that the machine was ultimately fitted with two Gnome engines instead of Lanchester Radials, and that an experiment was made with it in the South of England, on which occasion the machine left the ground with considerable facility, but failed to manoeuvre to the satisfaction of its inventor after doing so, and on its return to the ground was somewhat deranged. Though this occurred some little time ago the machine has not yet made another appearance, and Mr. Lanchester's next effort is awaited with keen interest by those who, while continuing to regard him as the most eminent of our aeronautic scientists, are anxious to see his theories carried out in practice.

**The Late Eugene Ely.**

Last week a bald statement was published in most daily papers to the effect that Eugene Ely, an American aviator, had been killed flying at Macon (Georgia). Ely's death is a real loss to aviation, because he was one of the pioneers of the States, and, though in some ways a reckless flyer, was not merely a circus performer. His name will always go down in the history of aviation as the first man to start from the deck of a ship, thus demonstrating the possibility of an operation which, in the course of the next few years, will become part of the regular routine of work on a man-of-war.

**The Aeronautical Society.**

The new Council of the Aeronautical Society has not been long in making its influence felt. Among the new members elected during October are: The Marquis of Tullibardine, Lionel de Rothschild, Esq., Professor Archibald Barr, Captain A. H. Grubb, Dugald Clerk, Esq., Dr. W. Watson, Lieut. R. Gregory, R.N., Sir Charles D. Rose, Professor C. V. Boys, Professor H. F. Lunn, G. Holt Thomas, Esq., E. T. Willows, Esq., Hon. Maurice Egerton, Lieut. C. R. Samson, R.N., Captain E. L. Gerrard, R.M.L.I., and Horace Short, Esq., thus showing that a Council worthy of serious consideration can command the adherence of members of a class which can, and do, assist in forwarding the real progress of aviation.



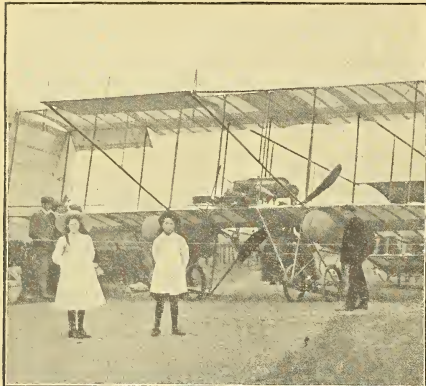
Mr. O. C. Morison, one of our very best monoplane flyers, on his Morane racer.



### Another Bristol Tour.

Writing from Hayling Island, Mr. Howard Pixton says:—"Enclosed you will find two photos of the Bristol I flew down here on Saturday week last, from Amesbury. One view shows machine shortly after I landed and the other shows it camped out for the night between some bathing machines and a house.

"I brought Lieut. Burney, R.N., with me as passenger. We waited about two o'clock, and landed at a place called Durley—near Eastleigh—for lunch, arriving here about five o'clock. Slow journey accounted for a rather strong head wind and stop for lunch.



Mr. Pixton's Bristol fitted with safety floats.

"When nearing the sea, and passing over the Portsdown Hills, the steadiness of the wind was very noticeable. I have only been able to fly here on three occasions owing to the wind. During the past three days it has been blowing a gale, which seems to be steadily increasing. The machine is simply tied on the shore, with a few bathing machines round it, as per photo. It says something for the Bristol machine that it stands the weather as it does.

"You will note the floats under the lower plane, fitted in case the machine should come down in the sea."

### Those Glides.

Reports to hand almost daily from the United States announce that Mr. Alec Ogilvie, the well-known British aviator, and the Brothers Wright, experimenting with gliders on Kill-Devil Hill, have succeeded in making a number of glides on an aeroplane without an engine, the longest being some 280 yards in length. It may be well to note that early in 1909 Mr. Alec Ogilvie, experimenting with a glider built by Mr. Clarke, of Kingston, succeeded in gliding from a hill in Sussex for considerably over a quarter of a mile, and Mr. Gordon England and Mr. Gerald Leake, on Weiss gliders, flying from Amberley Mount, have on one or two occasions covered almost

half a mile, so that the present Wright experiments are not so very wonderful. Still, these are only preliminaries, and, with Mr. Ogilvie's assistance, they may yet succeed in accomplishing something really startling. In fact, indirect information from private sources indicates that, as noted in THE AEROPLANE a week or two ago, they have already performed far greater feats than anything noted in the daily press.

### Colonial Military Flying.

As the result of Brégué's voyage to Fes, the French Government are now taking up the question of regular military aerodromes in Morocco and Algiers, and Brégué himself has returned to France in order to confer with the French War Office on the subject. It is about time that the British Army Aeroplane Corps was extended to embrace detachments in India and Egypt. Already quite a number of officers in the Indian regiments and in regiments quartered in India have taken their aviators' certificates, and one may hope that something definite will be done before long.

### Roumania in Front.

Even Roumania is in front of England in military aviation. The autumn manoeuvres of the Roumanian Army last week brought out six aeroplanes, which worked in conjunction with the troops. The one civilian pilot, Poly Vacas, arrived on a biplane at Roman from Bucharest, 350 kms. by air, making three stages of the journey. The Third Army Corps had attached to it three biplanes, piloted by Vacas and Sub-Lieutenants Protopopescu and Negrescu. Opposed to it was the Fourth Army Corps, with three Blériot monoplanes, handled by Lieutenants Prince Bibescu, Capsa, and Zorileanu, the last driving a 70 h.p. two-seater. The monoplaneists distinguished themselves particularly by the height at which they flew, and all did good service. As a result, the War Ministry has decided to increase the aviation branch of the Army very considerably. It is interesting to note that the British Air Battalion could not to-day put up as good a show, for though there are six officer-aviators attached none of them have yet had any experience of fast monoplanes, and only two of them have flown a monoplane at all.

### The Royal Aero Club.

At the last committee meeting the following aviators' certificates were granted: 146, Lionel Seymour Metford (Blériot, Hendon); 147, William B. R. Moorhouse (Blériot, Huntingdon); 148, Zee Yee Lee (Bristol, Salisbury).

The competition for the Michelin cross-country prize closed on the 15th inst. Mr. S. F. Cody was the only competitor who made the cross-country circuit of 125 miles in accordance with the rules. The committee, after examining the observer's reports and certificates relating to the aeroplane, unanimously awarded the prize of £400 and trophy to him.

Mr. Cody made three attempts, and his successful flight took place on September 11th last, over the circuit comprising Laffan's Plain, Andover, Reading, Hendon, and Brooklands. (Time: 3 hours 6 minutes 30 seconds.) The specification of Mr. Cody's machine is: Cody biplane; motor, 60 h.p. Green; carburettor, Zenith; magnet, British Bosch; sparking-plugs, Pyramid; fabric, Pegamoid; propeller, British Chauvière.

The competition for 1912 is now under consideration, and will be announced at an early date. The prize will be £600, with a trophy attached, to be retained by the winner.

A letter has been received from the Home Office thanking the club for its action in appealing to aviators to refrain from making flights over or near churches on Sundays.—Harold E. Perrin (Sec.).



Mr. Pixton's Bristol "camped out" on Hayling Island. Note the right extension folded to decrease room necessary.



# VALKYRIE

## MONOPLANES.

THREE TYPES.

40-80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES,

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

TUITION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

THE AERONAUTICAL SYNDICATE, LTD.,

ESTABLISHED MARCH, 1903

COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

## 'Blackburn' Monoplanes & Propellers.

TUITION.

Mr. B. C. Hucks' double non-stop flight from Weston-Super-Mare, across Bristol Channel to Cardiff and back, was made on BLACKBURN monoplane fitted with BLACKBURN propeller.

'Phone: 2022 Central.

The BLACKBURN AEROPLANE CO., Balm Road, LEEDS.

Telegrams: "Propellers," Leeds.

## CLIFT AERO MAPS.

Used in the "CIRCUIT OF BRITAIN" and all Cross-country flights. Clift Maps were used by Vidart, Kimmerring, Valentine and others in the European Circuit, and by the majority of flyers in British Circuit.

## Clift Aero Compasses.

The compass certified to be the best by Latham, Valentine, Pizey, Fleming, Barber, and other experienced aviators. Necessities for the "CIRCUIT OF ANYWHERE."

For terms, write—ERIC CLIFT, c/o "The Aeroplane," 166, Piccadilly, W.

£750

... THE ...

## "Flanders" Monoplane

(TWO OR THREE SEATS).

(TUITION FREE TO PURCHASERS).

READY

60.80 Green Engine ("Circuit of Britain" type).

TO FLY

65 m.p.hr. (timed).

L. HOWARD FLANDERS, Brooklands, Weybridge.

## T. W. K. CLARKE & Co.,

SPECIALISTS IN OXY-ACETYLENE  
WELDED WORK.

CLARKE PROPELLERS.

CLARKE LANDING WHEELS.

CLARKE ACCESSORIES.

Send for our "FLIGHT FITTINGS" Catalogue

Fully Illustrated

By Post 3d.

Crown Works: KINGSTON-ON-THAMES.

## THE BENEY PROPELLER

British Design :: ::  
British Manufacture

AS USED ON THE "FLANDERS MONOPLANE."

ROBERT BENEY, 7, Carlisle Street Oxford Street, London, W.

## A Few Notes on Non-Rotary Aero-Engines.

By W. O. MANNING.

One of the difficulties aeroplane constructors have to contend with is the fact that so few engine-builders have had any practical aeroplane experience and do not understand how different the conditions are in a fast moving aeroplane from those that exist in their own works.

For instance, take the carburation. When an aeroplane gets going there is a considerable rush of air past the carburettor. This generally weakens the mixture considerably and has to be allowed for by increasing the size of the jet.

Only recently I was tuning up an engine of a well-known make; the revolutions with the machine stationary were 1,020 and in the air 1,030. I slightly increased the size of the jet, when the revolutions on the ground increased to 1,025 and the revolutions in the air to no less than 1,080, showing that in this instance, as I suspected, the mixture was being considerably weakened by the movement of the machine.

I have sometimes found it difficult to get makers to appreciate facts of this sort, as they are apt to hold that after being tuned up to give maximum power on the test bench no further interference with the jet is necessary.

The question of adequate warming of the carburettor, for those carburettors that require it, is also frequently overlooked by makers. Many times I have known it to be necessary for the owner to rig up some makeshift arrangement for this purpose. This is a matter which undoubtedly falls within the province of the engine-builder, and which he certainly ought to attend to before the motor leaves his works.

Makers forget that aeroplane motors are working in considerably cooler air than even car engines, which have the air which passes over them warmed by passing through the radiator, so that warming arrangements which may be satisfactory in cars are often inadequate for aeroplanes.

Mechanical breakdowns are very rare in a modern motor of good make and suggest their own remedy, but there are several points of design in which some motors are capable of great improvement.

Take auxiliary exhaust ports in cylinder walls for example. A maker will tell you that they increase the power so much that he prefers to put them in, but they are open to objections, as well as to the air, and it will be necessary in the near future for makers to find some way of getting rid of them together, while keeping as much as possible of the extra power they give.

They are objectionable in several ways; you cannot put a silencer on them, for it must be remembered that most of the extra power which they give does not come from the fact that the exhaust gets out of the cylinder quicker, but from the fact that air gets into the cylinder better, which increases the amount of explosive mixture the engine can use. It will, of course, be seen that if you put a silencer on, one cylinder

will be sucking in the exhaust of some other cylinder, which, of course, does not help it a bit.

All aeroplanes must be silenced in the near future, and engine-makers must appreciate this fact.

Another objection to such exhaust ports is that you cannot prevent them from throwing oil over everything. If your engine is in front, this generally means that you get bespattered with hot oil and that most parts of your machine will be covered with it. If your engine is behind you cannot start it up without touching some wire or strut which leaves objectionable marks on your clothes. It also increases the running costs, as all the unused oil thrown out has to be paid for, and it also means larger and heavier oil tanks.

Further, wherever the engine may be, it gets into an oily, greasy mess, which collects all the dirt and dust in the neighbourhood, to the great detriment of the working parts.

I would also impress on engine builders that it is objectionable to make their motors longer than they can help. It is one of the aims of the aeroplane constructor to keep the longitudinal moment of inertia as low as possible, and a long engine is a great nuisance in this respect.

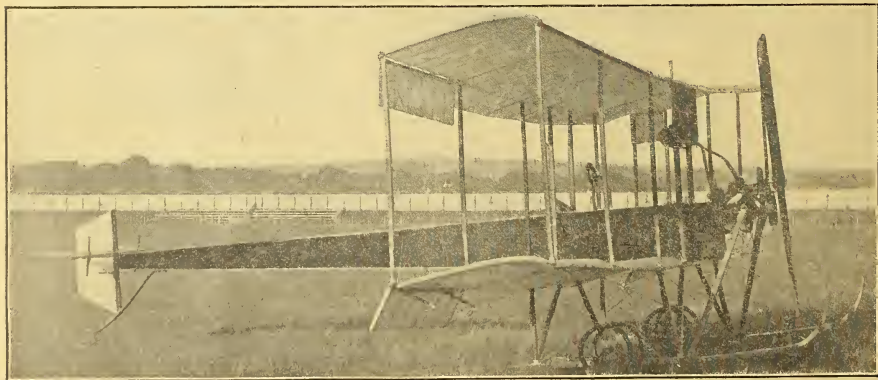
Of course, I do not mean to condemn engines which have the propeller end of their crank-shafts extended, as this extension is often of service in enabling a much better front end to be built on to the fuselage, and so leads to the reduction of head resistance. The engines I refer to are those having exceptionally long crank-shafts with all the cylinders spaced more widely than usual.

Another objection to long engines is that your engine guides and general fixing arrangements have to be longer than usual with a consequent increase in weight.

An exhaust valve lifter is a very useful fitting for an aero engine. It enables the aviator to stop his motor by opening all the exhaust valves; this makes the engine so easy to turn that it is almost impossible for it to stop rotating in the air, so the aviator is certain of getting power again if he wants it at the end of a long *vol plané*. Credit should be given to an English engine, the "Green," for initiating this improvement.

The general method of fixing high-tension wires into the magneto is one that gives a lot of trouble, as they are very liable to jolt out, and it is necessary to adopt some makeshift arrangement to tie them in. This is a matter which the engine-builder should take up with the magneto maker, to their mutual advantage.

Some arrangements should be provided for supporting the wires from the magneto to the plugs; at present they are generally allowed to hang in festoons all over the motor in a most unsightly way. An examination of any modern car will suggest methods of carrying this out.



The Collyer-England Biplane, now at Brighton-Shoreham Aerodrome. With a 2-cylinder engine, and controls of Deperdussin type, in a general way it is of Avro design. Mr. Collyer will be remembered as constructor of the "Otazel" monoplanes.



## The Fixing of Biplane Fuselages.

Now that the O-P-2-1 type of biplane, known either as the Avro type or Bréguet type, according to whether one happens to be a supporter of home industries or a Franco-maniac, is at last coming into its own, and the day of the engine-driven box kite is nearing its end, it may be of interest to show in a simple manner how the fuselage of the new type machine may be fixed to the planes.

By the courtesy of Mr. A. V. Roe, our artist, Mr. Max Millar, has been permitted to make the sketch reproduced herewith, showing exactly how the fuselage is attached in the Avro biplane. It must be recollected, of course, that a number of subsidiary stay wires have been left out to avoid complication in the sketch, but the position of these will immediately suggest themselves. As may be seen from the sketch, the upper and lower planes are built in sections, the outer parts of which are detachable from the centre, so that on the wings being taken off, the central section consists of a triangular fuselage, the skids and wheels, and the upper and lower planes for a width about equal to the skid track.

The lugs which hold the four central uprights have steel extension pieces projecting outwards, and to these the main spars of the wings are bolted, the wings being afterwards staked to the chassis with wires.

In the centre section of the lower plane the place of the main spars is taken by stout wooden beams, the ends of which rest on the junction of upright struts from the skids. On the centre of these beams are two sheet-steel chairs in which rests the lower longitudinal member of the triangular fuselage to which the chairs are bolted.

From the top and bottom of each main plane upright run two steel tubular stays as shown in the sketch. These are bolted to the upper longitudinal of the fuselage on each side. In this way the fuselage itself is braced tightly to the upper and lower planes, and the weight is conveyed direct to the chassis struts. Across the top of the fuselage run strong struts from the points at which the tubular struts are bolted, and on the forward end of these rest the after ends of the engine bearers, the forward ends resting on the front of the fuselage. The engine bearers are also supported on each side by a supplementary strut running from the skid on each side through the aluminium plating of the fuselage under the upper longitudinal direct to the engine bearers.

The engine itself is, of course, braced by numerous steel wires, which, as mentioned above, have been omitted for the sake of clearness.

Referring to the sketch, there will be seen behind the lower forward tubular strut a metal plate projecting through the side of the fuselage. This is one end of the rudder bar, and from it wires run back to the rudder. Just behind it is a projecting rod with a vertical T piece on the end. This is the end of each end of the T piece the elevator wires are attached, the fitting being the same on the opposite side of the fuselage.

Between the two main plane uprights may be seen a small tank held between wooden clips. This and a similar tank on the opposite side contain petrol and oil, and for long-distance journeys a supplementary tank is carried in the fuselage under the deck shown between the engine and the control wheel.

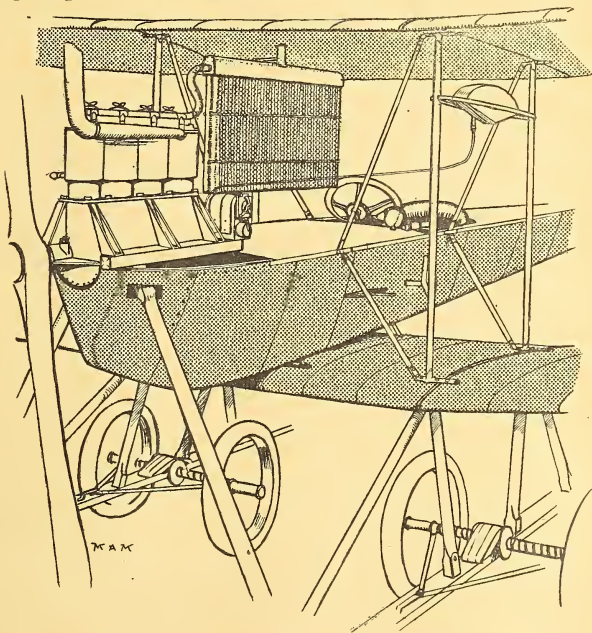
The radiator which appears behind the engine is held in place by stay wires to the fuselage, and to the main spars and struts of the upper plane, these wires also being omitted for the sake of clearness. The chassis, as may be seen, is of the type commonly known as "Farman."

Altogether the whole arrangement is exceedingly neat and simple, and reduces head resistance very considerably when compared with the box kite type, in which pilot, passenger, and everything else are so disposed as to offer head resistance.

It should be noticed that the machine shown in the sketch is a single-seater, designed to carry a big load of petrol for long-distance flights, but in the two-seater the radiator is differently disposed, and the passenger is seated in front of the pilot over the centre of pressure in the position at present occupied by the radiator and long-distance tank.

### French Colonial Aviation.

Lieut. de Labordes, of the French Navy, has ordered a Bériot to be sent out to him at Saigon, where he is attached to the French Far-Eastern Fleet, and there he will conduct experiments. We have yet to hear of British naval aviation on the China station, or even in India.

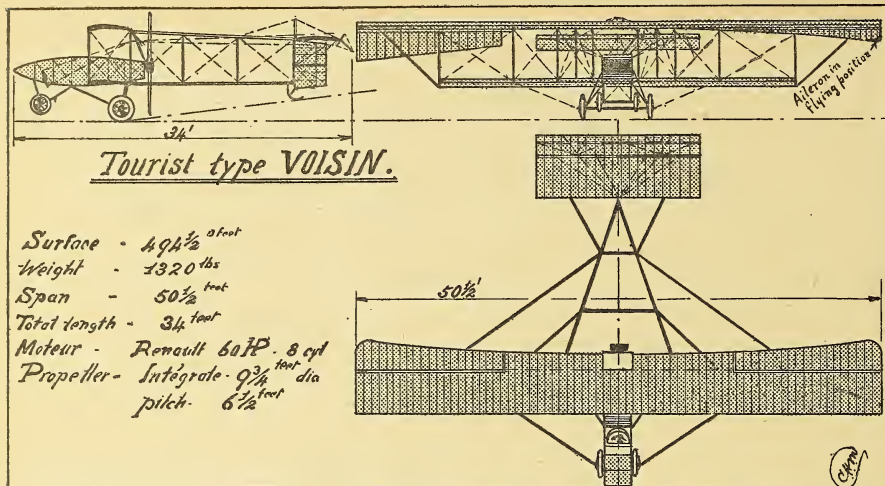


Method of attachment of Fuselage and Chassis in the Avro Biplane

### Questions for Pilots.

Readers of THE AEROPLANE are reminded that there is still time to send in replies to Mr. W. O. Manning's examination paper published last week, and, in order to give intending competitors another week-end in which to write their papers, it has been decided to accept replies up to first post on Monday next. The names of those who send in intelligent replies, but who do not actually win, will be filed for reference, for THE AEROPLANE is frequently in a position to recommend pilots, workmen, and others for specific jobs, and it will be convenient to have the names of men who have already shown an intelligent understanding of aeroplane practice.





#### The Voisin Biplane.

The latest type of Voisin biplane, of which dimensional sketches are given above, is worthy of attention, for it was on a similar machine that M. Michel Mahieu recently beat the height record with a passenger. The machine is of the engine-behind type, to which there are so many objections, but a real attempt has been made to get away from some of the worst faults of the older machines of similar type, though in a way the cure has been worse than the disease. The two chief improvements are, first, that the machine is built throughout of steel, and it is therefore impossible for it to splinter in an accident and damage the pilot in this way. Also, taking it all round, steel tube is more reliable than wood, and, when properly used, is lighter for its strength. The second, and perhaps the chief improvement, is that the centre of gravity has been shifted forward so that there is comparatively little weight on the tail, which runs at a less angle than the main planes, and so gives the machine a certain measure of automatic longitudinal stability. However, this alteration of the centre of gravity is only effected by placing the unfortunate pilot far out in front of the main planes, in a position where, though apparently protected by the *nacelle*, he would, in the event of a head-first dive, inevitably be crushed by the weight of all the heavy parts of the machine. It will be noticed that there are no skids, but

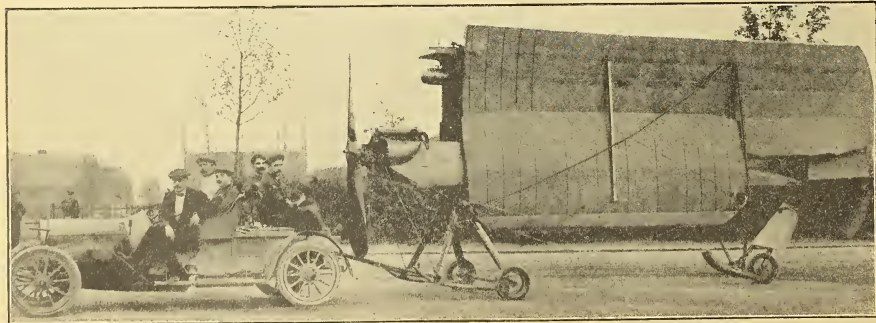
that the forepart of the *nacelle* carries a couple of good-sized wheels, which should save the front of the machine in the event of her running into a bank after landing, very much better than the absurd little skids which are fitted to most machines of the present day.

As regards lateral stability, the machine is no better and no worse than any other machines of its type, except for the fact that, having a cased-in *nacelle*, which would prevent the main planes from slipping outwards when turning, she would probably steer better than the average machine of the "box-kite" type; though, in the event of over-banking in a turn, causing an inward side-slip, it seems possible that this same casing of the *nacelle* might cause the machine to be slower in turning the side-slip into a nose-dive, which is the one safe manoeuvre under the circumstances.

Incidentally she suffers from another disadvantage common to all her type, namely, that in the event of the propeller bursting it may carry away the tail-booms, which means destruction to the machine and everyone in it.

Of her type she is probably the finest machine yet produced, yet it should not be difficult to improve the machine materially as regards her lateral stability, the safety of the pilot, and her general efficiency, and it should surely be unnecessary to use a 60 h.p. Renault engine to lift two men.

C. G. G.



The new British Army Bréguet being transported from the works for shipment. This machine has already been flown by Lieut. Hynes, of the Air Battalion, who has returned to Farnborough, and should by now be flying it there.

## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

## Aviation at the Scottish National Exhibition.

Sir,—As a keen student of aviation and a frequenter of the Exhibition, I have, naturally, spent a great deal of time in the Aviation Pavilion.

I wish to take up the cudgels on behalf of the scale model exhibitors. On passing round the pavilion the other evening I noticed, not without a feeling of indignation, that every model, without exception, is more or less damaged, some of them being, in fact, in a state of hopeless collapse, the work of some of our "sporting sightseers."

Not one of the scale models is in a whole condition. By this I mean to say that some of them are totally wrecked, others are devoid of propellers, and one model, a beautiful copy of a Blériot, has had its Gnome engine and Chauviere tractor (both exquisite copies, by the way) torn from the engine housing.

Who, I ask, is really responsible for the safe-keeping of the models? There is one attendant in the pavilion, but he cannot really be expected to keep his eyes on everything at once.

There is a prize of five guineas for the best scale model, and one of two guineas for the second best. The judging has not yet taken place, notwithstanding the fact that several of the exhibitors were informed that models must be forwarded at least three clear days before the opening of the Exhibition in May. Now, I ask you how can anyone be expected to judge a model that has such vital parts as propellers and engines missing, to say nothing of chassis damaged almost beyond repair.

There is no doubt that several, at least, of the owners of the models in question deserve some compensation for their loss, and I beg to suggest that the authorities concerned make the prize money up to ten guineas and divide equally among the model exhibitors whose models were intended for competition.

Glasgow.

MODEL EXHIBITOR.

## Exorbitant Carriage.

Sir,—Your paragraph on "Railway Fares for Aeroplanes" reminds us of a similar experience.

At the beginning of this year we purchased a Farman biplane at Newcastle. After the negotiations were complete we proceeded to take steps to have it forwarded to London. We found that the railway company could not take it, as the crates were too long, the dimensions of the largest being 36 ft. by 9 ft. by 8 ft., the total contents nearly 3,000 cu. ft. We were, therefore, obliged to send it to London by boat. From the London Docks it was conveyed by road to Brooklands Track, the charge being £25.

As a contrast to this, we may mention that the carriage on the "Avro" biplane, less the engine, from Manchester to Brooklands track is only £1 16s. 6d. The machine can be packed so neatly that the total contents are only about 300 cu. ft., and the whole machine goes as ordinary goods.

Manchester. A. V. ROE AND CO. (per H. V. Roe).

[One obvious way of abolishing railway charges is to buy all British machines and fly them home.—Ed.]

## Traps for the Unwary.

Sir,—In the interests of aviation pupils, I should like to draw attention to a regrettable piece of neglect on the part of those responsible for the ground management of Hendon Aerodrome. The particulars are as follows:—

On Thursday morning, October 18th last, I, as one of Mr. Chanter's pupils, was out rolling at Hendon Aerodrome. I arrived at the side opposite the hangars all right, and, turning the aeroplane, started to return. I had not gone very far when suddenly I saw in front of me what appeared to be a black patch upon the ground. I immediately retarded the ignition, and, unsuccessfully trying to avoid the obstacle, hit a corner of it, which, jumping the aeroplane into the air, landed me into a pit, at the same time throwing me out on to the left wing, fortunately unhurt.

On examination, I discovered to my amazement and indignation a draining pit, and the covers (two), which should have been on top, about four feet away, not only making a

dangerous object, but leaving the pit entirely unprotected. About twenty feet away was another pit, and upon the other side of the aerodrome are two similar pits, one of which was covered.

I am informed that the pits are left open for the cattle to drink from, but upon that morning the pit was perfectly dry and there were no cattle in the aerodrome.

The accident caused considerable damage to the aeroplane, and my aim at present is to protect pupils against having a similar mishap which might end more seriously; and it needs no description of what would happen should an aviator land by accident upon one of these "remous in the earth."

I trust you will give this letter the necessary publicity, as we poor pupils are in the position of being liable to more kicks than ha'pence should we attempt to argue with those in authority at this or any other aerodrome.

Hendon.

GEORGE J. HOPKINS.

## The Aerial Farce.

Sir,—

Although one would think that outside an asylum There could not exist, not even in Bromley, A man among men who is so unenlightened, Who lacks such small knowledge of things aviatric, As even in Board Schools and those of the Councils Is grafted in up-to-date babes in first standards, That the width of our streets and the traffic within them Would never admit of a biplane alighting Or even a monoplane gracefully rising And fitting from one door e'en upon the next one Delivering letters and postcards ad libitum; though as I say the great impossibility of such a thing is most obvious to all men, There really exists in the deserts of Bromley A hermit so far from the haunts of his fellows Removed that he thought that they all were awaiting Arrival of letters and also of postcards Delivered direct from the hands of the air-men At each modest "Chatsworth" of Balham or Tooting. Perhaps e'en at Bromley this stranger of persons Awaited by day and by night the air-postman, And when by the G.P.O. did come his letter He felt like an ass, and like asses before him He turned to his neighbours and shouted *Tu quoque*, Although they had seen in the papers each morning (Papers are not read by B.L. of Bromley) The fullest of details and quite all about it And never expected a mono- or bi-plane To stop at their door, or, in fact, if it had done They probably soon would have called the policeman, Or at night thought that they had seen wonderful visions. Poor B.L. he really knows naught about flying And an equal amount about aerial postage (He really should spend quite a month down at Hendon). He longed to have printed his beautiful poem, Which he thinks is most worthy to rank with the highest Of poems from Chaucer right bang up to Kipling, For grace of its diction (though faulty in scansion). So giving advice as from pot unto kettle He says we are asses, we say "Same to you, sir," Your awful condition it wringeth our heart-strings, We trust that ere long you may be convalescent, Or at least not so hopeless, Oh! B.L. of Bromley. Clapham.

H.W.O.S.

## Our Schoolboys.

Sir,—What is the British nation coming to? Straws are said to show which way the wind blows, so do the sentiments of the rising generation show how our race is deteriorating.

Whilst every nation [except England.—Ed.] is straining its utmost nerve for the supremacy of the air, and sparing neither life nor limb, we, forsooth, must print grandmotherly complaints from schoolboys such as our "Harrovian" has thought fit to indicate.

The British Empire has been built by men (many from Harrow) who did not know the word fear, and it will only remain a nation whilst this class of man is turned out from our public schools. To court danger is the prerogative of youth. Life demands it. Time enough when trembling age advises caution and preserves the balance.

Without upholding any type of foolhardiness, one must consider that this censured flight may have sown the seed from which some day will spring the great aerial strategist of our nation.

Kensington.

AN OLD WESTMINSTER BOY.



## C.R., C.P., C.T., and C.G.

Sir,—“Ventre-à-terre,” in your issue of September 28th, 1911, asks for enlightenment on a few points of interest.

With regard to the variation of speed by adjustment of horizontal rudder and throttle, I think he will find that the late Hon. C. S. Rolls, at the Bournemouth aviation meeting, at which he unfortunately lost his life, won the “slow speed” competition with a flying speed of 25 m.p.h. I believe the full speed of his flyer was something like 40 m.p.h., so that the reduction amounted to about 15 m.p.h. Now, considering that the machine flown was one of the old-type “Wrights,” fitted with an auxiliary damper at rear, and, consequently, not to be compared with the more advanced machines of to-day, and that although Rolls was one of the best flyers of that time he had not had the all-round experience which some of our present pilots have had, it seems fairly certain that, given a good pilot and a well-designed machine, the 20 m.p.h. speed reduction which I mentioned should be quite an easy matter of accomplishment.

Fast flying naturally appeals far more to the average aviator than slow, and is also far more necessary from the stability and efficiency point of view, so that few aviators ever take the trouble to find out the slowest speed at which their machines will remain in the air, and even when they have done so, therefore, unable to quote any definite instance of speed reduction apart from that of Rolls, but can assure “Ventre-à-terre” that, did necessity arise, it would be quite possible to obtain the reduction mentioned without decreasing to any appreciable extent the altitude.

Shifting the C.G. is all very well in theory, and mechanically should not present many difficulties, but to get that nicety of adjustment necessary in such an apparatus and to assure of the pilot having complete control of a machine so fitted is not quite such a simple matter, and at present we do not feel the necessity of instituting such an innovation on flyers as now constructed, since, apart from other considerations, the fitting of such a device would entail added weight and a complication of working parts, reducing the safety factor and adding trouble and expense in manufacture until the advantages of the system were entirely outweighed by the disadvantages.

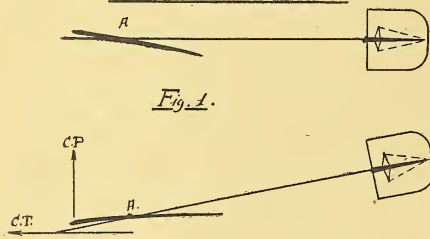
All centres coincident at A.

Fig. 1.

Fig. 2.

In the present comparatively slow and small, and lightly constructed, aeroplanes, it is found best to leave the entire control in the hands of the pilot.

Later on, when we start building flying machines on a big scale, perhaps we might consider the advisability of fitting some automatic device for adjusting the centre of gravity, as also for controlling and operating the wing surfaces and controlling planes.

“Ventre-à-terre” seems to harp too much on the term “centre of drift.” Drift is Sir Hiram Maxim’s term for plane thrust; that is, the thrust of a moving plane against still air, or vice versa. I take it that what he really means is “centre of resistance.” Obviously, the C.R. has to be reckoned with in the designing of a flying machine, but the exact location of it is not so all-important as that of the C.G., C.T., or C.P. If the latter are all correctly situated, one can be fairly sure, providing that the machine in view is of orthodox design, that the C.R. is not very far out.

At the moment I cannot call to mind any machine which has its resistance centre exactly in its proper place, although there are a number of makes fairly near correct. The latest type single-seated Blériot seems to me to be about the best

in this respect. “Ventre-à-terre” states: “The centre of thrust being in line with ‘centre of drift’ (resistance), the ‘centre of thrust’ is always lower than half-way between the planes.”

Probably so; but that does not mean that the machine so built is correctly designed, but simply that the designer, in considering other and, to him, more important points in his design, has found it necessary to cause the C.R. to be lower than it should be. The accompanying sketches show the correct placing of the C.G., C.P., C.T., and C.R.

Fig. 1. shows the machine in normal flight. Fig. 2. shows machine diving. It will be seen at once that directly the aeroplane is tilted from the horizontal the C.P. moves forward in front of C.G., causing a righting torque to come into being; the C.T. is lowered, and, consequently, the propeller exerts a vertical lift, and the empennage and horizontal rudder are momentarily given a negative lift. Such a machine, therefore, should, in the event of anything happening to the pilot, be safely reckoned upon to maintain a horizontal course, or, should the power give out, to land on a fairly even keel. I trust I have made myself perfectly clear. Pressure on my time forbids, unfortunately, my going further into the matter at the present time.

ERNEST WARDE-FOX.

## More About Freak Models.

Sir,—I am afraid that “Roy” has misunderstood, presumably unintentionally, the general purport of my letter in THE AEROPLANE of August 24th. I quote verbatim from that letter: “I contend that the aero-model, if constructed on proper lines, can render inestimable service in the design of the full-sized machine. *It can be used, inter alia, to demonstrate stability, efficiency, and new propeller types.*” Nowhere do I say that freak models *cannot* be used to test new propeller types. But is “Roy” aware of the fact that the kind of propeller that might be a great success on a “freak” would very often be utterly useless if applied either to a symmetrical model or to a full-sized machine?

I must congratulate “Roy” on his somewhat candid admission that “freaks” are “less trouble to build” than proportionate machines. “Roy” is doubtless aware of the fact that the “Mann” monoplane sustained at one period during the summer several unfortunate reverses. It would have entailed very little trouble for his designer to cram on more power and supply propellers of a gigantic diameter and pitch, but, contrary to the usual practice, he preferred rather to increase the efficiency of his machine. Weeks and weeks were employed in arduous experimental work, pages and pages were filled with algebraical calculations, and all this time his hard-won records were slipping away under the attacks of a veritable hail of “freaks,” darts, and projectiles. But science eventually triumphed over mere brute force, and to-day the “Mann” monoplane stands supreme among models, its single ounce of rubber giving better results than the two or three ounces employed on many other machines. But it would have been far easier merely to cram on the power, as presumably “Roy” would have done under like circumstances.

I hope “Roy” does not consider that I am an advocate of exact scale models, for experience has taught me that whether propelled by rubber or petrol they are distinct failures. But what I do advocate is some sense of general proportion. There is a vast difference between a 16-in. span and two 12-in. propellers and a 20-in. span and two 9-in. propellers, the latter being the dimensions of the model I was holding in the photo “Roy” refers to.

There are some machines flying (e.g., the Baby Wright), and others in course of construction, with similar relative propeller area to the “Mann” monoplane, but I challenge “Roy” or anybody else to quote a single full-sized machine approximating in dimensions to the “freak” referred to above.

Perhaps, in conclusion, “Roy” would like to hear the litany that I duly recite before every model contest. It runs as follows:—

“From the dreadful projectile,  
Fifteen seconds’ quarter mile;  
From the model crammed with power;  
In the terrifying hour  
When the huge propellered freak  
Makes the judges cover seek;  
From the dart and flying stick,  
Both devices of ‘Old Nick’;  
From the remou and the tree,  
Libera me, Domine!”

Surbiton.

ROBERT P. GRIMMER.



## Wind Speeds and Pressures.

Sir,—Possibly some of your numerous readers may find the following table of velocity and pressure of winds useful:—

Description.	Speed (m.p.h.)	Pressure (lbs. per sq. ft.)
Scarcely perceptible ...	1 ...	.005
Perceptible ...	2 ...	.020
Slight breeze ...	4 ...	.080
Moderate ...	8 ...	.320
Fresh ...	15 ...	1.125
Brisk ...	25 ...	3.125
Strong ...	30 ...	4.50
High ...	40 ...	8.00
Storm ...	50 ...	12.50
Violent storm ...	60 ...	18.00
Hurricane ...	80 ...	32.00
Violent hurricane ...	100 ...	50.00
Gust observed, 1866 ...	126 ...	80.00

J. G. ROBINSON.

## The Revolving Model.

Sir,—In the current issue of your journal I notice a small announcement under the heading "Models at Bristol," in which the following statement occurs:—"Vessey" (similar to Givaudan) double monoplane flew well, but turns round and round on its axis. Unpleasant for pilot, unless on universal joint."

With your permission, sir, I should like to say, first, that this machine is not similar to Givaudan's, and that I hope soon to have an opportunity of correcting Mr. Tivy's views relative to this point. Secondly, that the rotation was evidently due to faulty "tuning up" or bad launching. Thirdly, that such a phenomenon cannot occur on the full-size machine of this design. Incidentally, I should like to draw your own attention and that of your readers to the fact as above stated, viz., that, although the model "turned round and round on its axis," nevertheless it "flew well." Could such a performance be expected of any other model, to say nothing of being realised.

A few days previous to the Saturday in question I was flying one of these models in the same locality in a very gusty wind, which must at times have reached a velocity of 40 m.p.h. The model, which weighed under an ounce, proved perfectly stable, and covered a distance of quite 100 yards on several occasions.

ERNEST A. VESSEY.

## Model Flyers at Cardiff.

Sir,—I am interested in model aeroplaning, and wish to join a Model Club, if there is such in Cardiff. As there are doubtless many others interested in this direction, I should esteem it a great favour if you could put me in communication with any gentlemen desirous of forming such a club in Cardiff.

W. S. WILLIAMS.

Myrtle Cottage, North Road, Cardiff.

## A Slip as to Date.

Sir,—I notice that in your current number Messrs. A. V. Roe and Co. advertise that the third prize at Brooklands on October 4th was won by an "Avro" pupil. I beg to point out to you that this is incorrect, as it was won by myself on a Spencer biplane, and I have never been connected with the "Avro" School.

HERBERT SPENCER.

## THE VISITORS' LIST.

MR. R. BLACKBURN, very well pleased with the progress being made at the Filey School, came to call on THE AEROPLANE on his way to investigate possibilities for a school near London. The Blackburn machine has proved its capabilities so well in the hands of Mr. B. C. Hucks during his West of England trip, and has been doing such a terrific amount of hard work at and round Filey that it is quite time Londoners had an opportunity of seeing the machine at work, so that Mr. Blackburn would certainly be well advised to start a school near London, especially in view of the fact that the War Office is practically bound to buy British machines before long, and that the Blackburn machine has proved itself eminently suitable for military work, being exceedingly strong and having been proved capable of landing in, and getting out of, cabbage fields and other agricultural localities. The machine has, however, suffered so far from not having been seen by any of the military authorities until the start of the "Circuit," when both the machines entered had very bed

luck and did not show their true qualities. Since then at least two of the machines have flown in 30 m.p.h. winds comparatively frequently, and, therefore, it deserves consideration when the authorities are purchasing British-built machines. It is also probable that a slightly smaller Blackburn will be put on the market at a lower price, which should interest those now seriously thinking of purchasing machines.

MR. HERBERT SPENCER, whose first pupil, Mr. Ballard, has made such excellent progress at Brooklands, called to discuss school work. He has two other pupils who hope to join him soon, but who are at present abroad with their regiments, and several other pupils are in prospect. He intends to go in for regular school work at Brooklands throughout this winter. A speciality of his course of instruction will be that not only will he give a thorough schooling in aeroplane flying (of which he is now one of our most competent exponents), but will include balloons, parachutes and man-lifting kites in the course, as he has made arrangements with his brothers' firm to have a number of balloons placed at his disposal for educational purposes. Next year Mr. Spencer is under contract to make a flying tour in Canada, and on this tour he hopes to take not only a passenger-carrying machine of the box-kite type, but a more modern machine of the Avro type, and he is making arrangements by which school work will be continued at Brooklands as usual until his return.

LIEUT. T. SEBAG-MONTEFIORE, R.A., now on his way to South Africa with his battery, called for information concerning flying in South Africa. He took his certificate a few months ago at the Bristol School on Salisbury Plain, and, though his flying was at first rather an alarming spectacle owing to his habit of flying tail down, he had plenty of dash and enthusiasm, and gave promise of being a really fine flyer if he had been able to continue practising. He intended to take on a post-graduate course, but his departure for South Africa has prevented him from doing so. However, as there are promises of further developments in South African aviation ere long, he hopes to get his opportunities there. Readers in South Africa may rest assured that if Mr. Montefiore arranges to fly at any of the aviation grounds which are to be started there they will see some really capital exhibitions, and, as he is thoroughly keen on aviation, he should be a very valuable ally to those who are now endeavouring to stir up interest in the Colony and Transvaal.

MR. COLLYNS PIZEY, of the Bristol School at Brooklands, came in on his way back from Bristol to Brooklands full of enthusiasm for the progress now being made. He describes the new two-seater monoplane as magnificent, and is naturally anxious to have one at Brooklands for passenger work, where it would undoubtedly be most popular as soon as the weather settled down for the usual November and December calms. Cross-country passenger flights on such a machine should be a great attraction for well-to-do sportsmen, and should prove effective in securing new pupils for the Bristol School. The Brooklands School, though it has only been open a few weeks, has already passed several pupils for their certificates, and nowhere does a pupil get a more thorough training, for each pupil has tuition both from Mr. Pizey and his able colleagues, Mr. Fleming, and so acquires knowledge of their two essentially different styles of flying. Both instructors are equally capable, and are equally popular with their pupils, and with their friends the enemy at the other schools at Brooklands.

MR. ERIC CLIFT, just back from his motor-boating holiday on the Solent, is now starting on a fresh series of maps, which should be of the greatest service to every aviator who aspires to the Superior Certificate which is sure to be instituted about the new year. The new maps will indicate the route from aerodrome to aerodrome all over the country, so that the budding cross-country flyer will have every assistance when making his first real journeys. Mr. Clift is anxious that his new work shall be as complete as possible, and asks the assistance of pilots with cross-country experience in making it so. Every aviator has his own pet landmarks over certain courses; for example, in flying from Hendon to Brooklands nearly every pilot looks out for the Hampton Reservoirs, and on the return journey makes for the Welsh Harp. In flying from Brooklands to Brighton, Mr. Hamel and Mr. Morison have noted the prominence of Leith Hill and Charterhouse College. Flying from Hendon to Farnborough, Mr. Hamel particularly noticed the Hounslow Barracks, Staines Reservoirs, and the Basingstoke Canal. Mr. Moorhouse, in his flights from Huntingdon, follows the railways, and recognises the lines by the pattern of the signals if in any doubt as to their identity. Mr. Clift wants all the information of this kind that he can get, and, for the good of aviation, THE AEROPLANE asks all its

friends among cross-country flyers to give Mr. Clift as much assistance as possible. By making Mr. Clift a kind of "Clearing House" for their experiences they will effect a useful all-round exchange of experience, to their mutual advantage. Besides notable landmarks on well-travelled routes, Mr. Clift wants information of a general kind. For example, one pilot says it is no use marking main roads where the roads are tarred, because they do not show up against dark land or ploughed fields, and the untarred by-roads are more useful. Another says it is no use marking church spires, because at a few thousand feet they look as flat as the rest of the country, but that churchyards can be seen easily, and can be identified if the arrangement of the houses round them is clearly shown. Another wants the general outlines of towns shown. Opinions and information should be sent to Mr. Clift, c/o THE AEROPLANE, 166, Piccadilly, W.

MR. R. F. MACFIE, back from his honeymoon in Paris and on his way to America, said that he hoped to return in a couple of months with his new schemes thoroughly developed. Apparently they are of a somewhat international character, and though he is at present about as communicative as a healthy mollusc, those who know him best fully expect that, when given properly serious consideration by wide-awake Americans, his big ideas will be of practical utility, and will obtain the support which he believes cannot be got in this country.

MESSRS. ROSS AND HOPKINS, of the Chanter School at Hendon, came to discuss the regulation of flying grounds, particularly in relation to obstacles such as that with which Mr. Hopkins became acquainted last week. All aerodromes suffer from traps of one kind or another, and though aerodrome managers should certainly use their best endeavours to minimise their dangers, pupils should certainly make a careful survey of the ground when joining any school, so as to know where to be on the look-out for trouble.

#### A Clever Idea.

Many aviators keep tame talking machines, either at home or in their sheds, to while away the long hours when flying is impossible. To ameliorate the lot of their victims, Miss Ivy Saunders, the sister of Captain Saunders, the well-known designer and constructor of the Saunders biplane, has invented an accessory which she calls the "Meltone." This is a clip resembling a clothes-peg in principle, which fits on to what is known as the "style" bar of the reproducer. The two points of this clip are covered with rubber and are held together by a spring, with two thumb plates to open them, and it can be slipped on or off while the machine is playing.

The difference in the tone of the instrument when the clip is in place is quite wonderful. Besides softening the tone and doing away with that nasty tinnny sound, so noticeable even in the best instruments, it almost completely eliminates the gentleman who apparently stands in the background, scratching a rusty iron plate with a big nail while the record manufacturer's pet band is playing its most soulful music.

Where the "Meltone" has most effect is without doubt in vocal records. It softens and humanises the tone of the singer, seeming to make the words clearer, and at the same time suppressing almost entirely that horrible hammering noise supposed to come from a piano, which runs the singer a very close second all through the record. Judging from the general improvement effected in the tone of the talking machine, Miss Saunders should have every success with this accessory, and she certainly deserves it, for she has done everything herself, from taking out the patents to superintending the manufacture.

#### A French Opinion of a British Aeroplane.

M. Alfred Ressejean, the well-known French sportsman, had just been for a passenger flight with M. Léon Versepuy on his Bristol biplane, with which he has recently opened a school at Issy-les-Moulineaux. Said M. Ressejean, on descending: "I have never had such a delightful experience. Versepuy is a first-class pilot, but he possesses in the Bristol an absolutely marvellous machine." Such a compliment, coming from a Frenchman who is jealous for his country's supremacy of the air, is indeed praise for the Bristol aeroplane, and helps to show that this country is able to produce machines as efficient as those built elsewhere.

#### An American View.

The *Pittsburg Dispatch* (U.S.A.), a payee of the European Circuit, remarks:—"The unanimity with which England received the fleet of aeroplanes which sailed over the Channel and continued on to Hendon contrasts remarkably with the

fluster with which a few years ago the application for authority to drive a tunnel under the Channel was refused. . . . It is plain that the aeroplane includes possibilities far more difficult to guard against than those which can be watched for at the mouth of a tunnel. Yet England denied commerce and travel the convenience of a tunnel through this fear, while it sees the flight of foreign aeroplanes over its territory without a tremor." The most sensible comment yet.

#### The Model Post.

It was noted in last week's AEROPLANE that some enterprising youths at Salisbury have been running an aerial post with models on their own account. As the affair was entirely sporting, no balance sheet was necessary.

#### CLUB NOTES.

##### Brighton and District Aero Club.

General Meeting held on Thursday last, when it was proposed that Social Evening should be arranged. Matter postponed so that members not present could express their opinions. Workshop and clubroom have been redecorated and members unanimous in congratulating Mr. H. Knowles and Mr. C. Barnett on efforts to make club comfortable. Pictures and plans from THE AEROPLANE and other journals adorn walls of room, and appearance is most inviting. Interest to note that Mr. W. Pettit (Secretary of Shoreham Aerodrome) and Mr. Wingfield (Chairman) have both become members and it is to be hoped that other distinguished gentlemen will be added to the membership roll.—C. A. C. WINCHESTER.

##### Manchester Model Aero Club.

Sixth weekly meeting held at Trafford Aerodrome on Saturday last. Treacherous wind did not prevent splendid flying. Mr. Williamson put up afternoon's best flight, 1,115 ft., closely followed by Mr. D. Wood, 1,107 ft. Former also accomplished flight of 51 secs. Mr. W. H. Booth launched patented stability monoplane with planes vertical. Machine righted itself immediately and flew steadily. Aerodrome will be held next Saturday (October 28th) at the same place at 2.30 p.m. Come yourself and bring your friends. Enquirers please write—KENMURE KINNA, 40, Bignor Street, Cheetham, Manchester.

##### Conisborough and District Aeroplane Society.

At meeting held on 18th it was decided to hold another model flying meeting on November 4th at Conisborough. There will be four competitions for distance, duration, speed, and direction. It is hoped to make this the largest model meeting ever held in England. Full details of the models entered already and more are expected.—T. S. WALLIS (Hon. Sec.).

##### Blackheath Aero Club.

In spite of rain-storms at last meeting one model flew 1,620 ft., with duration of 45 secs., wind causing model to circle. Duration competition Saturday (October 28th) at Kidbrooke. Full attendance of members, with models, is required. Competitors meet 3 p.m. as event will commence at 3.45 p.m. prompt. Several new members enrolled during week. Details to any model-makers writing to A. RIPPON (Hon. Sec.), 5, Limesford Road, Nunhead, S.E.

##### Bath and Somerset Aero Club.

In spite of weather over fifty people present at flying meeting, Saturday afternoon last, on Lansdown. Mr. Rowland Ding made excellent flights with Ding-Sayer models, and a dozen models flew, amongst which were five new flights by Messrs. Smallcombe, C. Willcox and R. Cross. Membership of club now rapidly increasing, and Hon. Sec., Mr. S. H. Baker, 11, Elm Place, Bath, will send particulars to prospective members.

##### Dundee Aero Club.

Members active in model-making and meetings will be held every fortnight. First on Saturday (28th), in B-ly Park. Little interest taken in flying here and money very scarce, but it is hoped to have a glider (No. 2) in construction shortly. Mr. Urquhart has gone to Edinburgh, and new secretary is—D. ROBERTSON, 11, Duldopie Street.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERLON, London.

Telephone: Mayfair 5407

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

##### UNITED KINGDOM

	3 months, post free	1 d.	3 months, post free	s. d.
6 "	"	3 3 6	"	5 6
12 "	"	6 6 12	"	11 0

Cheques and Post Office Orders should be payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c Payee only" otherwise no responsibility will be accepted. Should there be any difficulty in procuring THE AEROPLANE from local newsmen, each issue can be obtained direct by forwarding remittance as above.



## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted **ONLY**—18 words **1/-**. 1d. per word after.

### PATENTS.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS.

THE AEROPLANE will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to THE AEROPLANE, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

### MACHINES.

FOR SALE, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**£400** SPECIAL OFFER of twelve AVRO Biplanes complete with 35 h.p. Green engine. Usual price £600. Offer withdrawn November 30th. Write at once for particulars.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**£5,000** WORTH OF GENUINE BARGAINS, new and secondhand, for Sale. Send for lists. JUST RECEIVED FROM HENDON. £1,200 Valkyrie specially made for late Mr. Benson, £550 complete, including special offer. Various propellers, radiators, engines, and other machines from £10 each. Also eight Blackburn monoplanes, new, at second-hand prices. You can't afford to miss these.—WESTON HURLIN & Co., X Department, 13, Milford Lane, Strand, W.C.

CYCLEAEROPLANE, constructed by German workman in Lancashire, illustrated and described in *Cycling*, June 1st, 1910. Death cause of selling; what offers. TOM WILDING, Standish, Wigan.

### ENGINES.

**50-60** H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—THE AEROPLANE.

WANTED. Second-hand Gnome Engine 50 h.p. for hire, or would purchase. HERBERT SPENCER, Brooklands Aerodrome, Weybridge.

### PROPELLERS.

PROPELLERS.—"Avro" Propellers of proven efficiency 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co. Brownsfield Mills, Manchester.

CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS hold all Records, used by all leading Aviators. The Best, Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### TUITION.

TUITION, with or without limited liability, Blériot XI; personal instruction.—CHANTER, Aerodrome, Hendon.

**£50.** TUITION in flying till certificate is won. Avro pupils won Manville, Brooklands aggregate, 1st, 2nd, 3rd; Brooklands, October 4th, 1st and 2nd. The AVRO School for most thorough and all-round instruction. A. V. ROE AND Co., Brownsfield Mills, Manchester.

### TUITION—Continued.

L ANARK AERODROME, N.B. Tuition for R.A.E.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

HERBERT SPENCER FLYING SCHOOL, Brooklands Aerodrome, Weybridge. Practical Aeroplaning—Ballooning and Parachuting—constructional work. Fee from £50—Special terms to Naval and Military officers.

BARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

DEPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars, apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD., 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands

### MISCELLANEOUS.

HANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

### FLYING MODELS.

"W.H.C." EVERYBODY KNOWS THIS VALUABLE LITTLE MACHINE. Wins all prizes. Just to advertise this winter we offer three models, as below:—

No. 1—Lift off ground under own power, complete, 5/- guaranteed. Quarter-mile flyer, prize winner monoplane, 4/- "Reduced size "W.H.C." monoplane 3/- Give us a call or send ¼d. stamp for lists. Cheapest in the world.—WESTON HURLIN Co. (The Sloperies), 13, Milford Lane, Strand.

"MANN" MONOPLANES have the highest reputation of any model in the world. At the "Model Engineer" Exhibition the "Mann" Monoplane secured the highest award for flying models, thus bringing the number of prizes it has won up to TWENTY-FOUR. "Mann" Monoplanes (absolute and detailed reproductions of the record-breakers; 15/-; drawings and parts (assembled in about an hour) 5/-) "Mann" propellers (80% efficiency) 3/6 per pair; "Mann" geared winders (not egg-beaters) 5/6; "Willis" quarter-inch strip-rubber 1/6 per dozen yards; Willis lubricant 9d. and 1/3 per bottle. From all large toy shops and stores, or post free from the sole manufacturers, WILLIS BROS., 14, Wellington Square, Hastings.

THE CHEAPEST IN THE WORLD.—1d. How to build a prize winning monoplane, or 2d. post free. Our prize winning monoplane complete, 5/6; flies over ¼ mile every time. Elastic from 9d dozen yards. Geared winders, 1/- Elastic lubricant, 6d. Wire, wood, aluminum, and all accessories. Cheapest house. Send stamp for lists.—"REQUISITES," 47, Bedford Street, STRAND.

"M.S.C." MONOPLANE.—A genuine ¼-mile flyer complete with geared winder, post free 8s. 6d.—MURRAY STANGER Co., 20, Brograve Road, Tottenham, N.

MODEL PROPELLERS—Genuine CHAUVIERE—8in., 10in., and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.

ALLWEATHER single propeller Monoplane, guaranteed flight 1,000 ft., price 10/6 post free. THOROGOOD Co., Icknield Way, Letchworth, Herts.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, OCTOBER 26th, 1911

No. 21

**The "BRISTOL"**  
**FLYING SCHOOLS** **AT** **Salisbury Plain**  
**and Brooklands**  
**OBTAIN**  
**THE BEST RESULTS.**

They are Equipped with

## **"BRISTOL" Aeroplanes**

which are

**World - renowned for Stability**  
**and Strength**

And are built by

**The British & Colonial Aeroplane Co., Ltd.,**  
**FILTON, BRISTOL.**

**CONTRACTORS TO THE BRITISH, RUSSIAN AND CHINESE GOVERNMENTS.**

**Special Tuition Terms for Navy and Army Officers.**

**Passenger Flights may be had.**

**Write for full particulars.**

"THE AEROPLANE," NOVEMBER 2, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I. [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, NOVEMBER 2nd, 1911.

No. 22

CONSISTENCY.

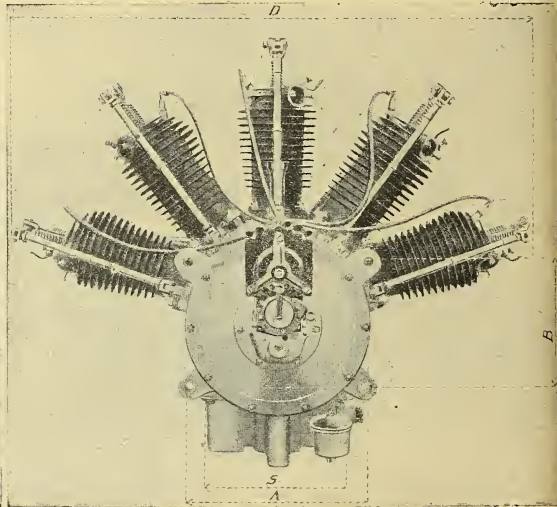
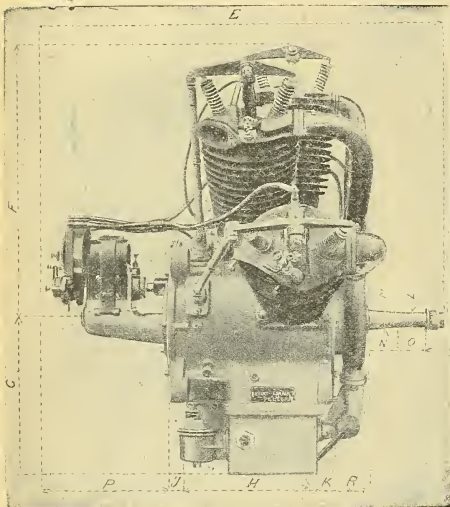


Mr. S. F. Cody, the most consistent flyer in this or any other country, has again won the Michelin Cup. He is here shown on his biplane, designed, built, and piloted by himself, prior to starting for his winning flight of 1260 miles in 5 hours 20 minutes, on Sunday last. This machine, driven by a 60-80 h.p. Green engine, has covered something like 2,500 miles in the air since last June, and yet the Government continually buy machines and engines abroad.

SMITHSONIAN OCT 28 1959



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40.50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

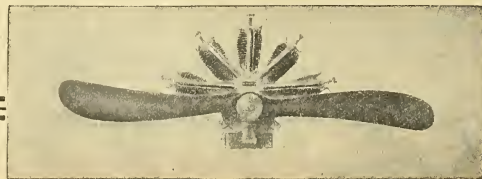
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.5"	20"	11"	9.25"	1.38"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"	
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





# CONTENTS.

	PAGE
THE GOVERNMENT AND AERIAL DEFENCE	507
MILITARY AEROPLANES IN THE HOUSE ...	507
AIR CURRENTS ... ..	510
THE FRENCH MILITARY TRIALS ... ..	512

	PAGE
THE WEEK'S WORK... ..	514
DEPERDUSSIN CONSTRUCTIONAL DETAILS...	518
CORRESPONDENCE ... ..	522
THE VISITORS' LIST... ..	525

## The Government and Aerial Defence.

The Government's policy in the matter of Army aviation, as announced by Colonel Seely on Monday last, might have been worse, but not much. It strictly adhered to it might, a year hence, promote us to the position of a third rate Power such as Roumania so far as our air fleet is concerned, but, of course, external and internal pressure will force the Government's hand and in a year's time we shall certainly own a couple of hundred military aeroplanes, and probably more. But, be it remembered, France already possesses something like 250 military machines, and Germany, despite her secrecy, is known to have about 100, and one can take it that these numbers will be at least trebled in a year's time.

Colonel Seely repeated on Monday the statement he made the previous week, that we have, or have ordered, 16 aeroplanes. The subordinate official who supplied him with that reply utters therein a subtle untruth, for we have not and we have never had 16 aeroplanes in flying order. The number 10 can only be made up by including the late C. S. Rolls's old Wright, the old "Type XII." Blériot, the old 1909 Voisin, and the impossible Paulhan, and probably included the monstrosities turned out by the Army Aircraft Factory.

As regards the policy of giving a bonus of £75 to every officer who obtains his brevêt, this is good so far as it goes, provided that the number of officers is unlimited, for every junior officer should be able to fly, just as he is able to ride, not as a matter of regular duty, but simply in case of emergency. Also the idea of further instruction for a superior military brevêt is good.

Colonel Seely's statement that the War Office were waiting to decide on the "best type" is, of course, what might be expected, but it we are to go on waiting for the best type we shall wait a long while. Who, for example, can state truthfully what is the best type of motor-car, or even the best type of horse for military work?

We shall need different types for different work.

For instance, Colonel Seely says an army aeroplane must carry two. That is all very well for long-distance reconnoitring, but what about the little light single-seaters which will be carried complete on a motor wagon, and will travel with every battery of artillery, two or three to a battery, simply to observe the effect of gun fire, and to give ranges? These will be single-seaters of about 25 to 30 h.p., and will cost about £250 to £300 apiece, in a year or two, when they are being built in dozens.

Then there will be the big four-seaters, which will be used a hundred at a time, to throw reinforcements quickly from point to point in the fighting line, or across estuaries.

To talk of a "best type" or of a two-seater as the only useful size is equally ridiculous, and shows equal ignorance on the part of the official who supplied Colonel Seely with his facts and the information from which he compounded his statement.

Nothing was said about supporting British industries, nor about the number of machines likely to be needed, so the British industry finds itself just about where it was, without anything definite to induce capitalists to support it. When will the Government realise that no Government support in its infancy means no capital to foster the growth of the industry, and no aeroplanes when we want them?

And no aeroplanes means practical annihilation for our army. For let it be remembered that a hundred, or two hundred, military aeroplanes in a big war will be neither here nor there. Aeroplane sections must become as numerous as Maxim sections. Every regiment of infantry and every squadron of cavalry will have its aeroplane scouting section, just as it now has its Maxim-gun section. And every battery of artillery will have its little section of aeroplanes for range-finding and observation of the effect of gun-fire. Anything less is mere playing with the subject, and waste of public money.

Mr. Sandys and other members who are leading this able attack on the War Office are doing more for the safety of the country than most people imagine.

### Military Aeroplanes in the House.

Mr. Sandys (Wells, Opp.) raised the subject of military aeroplanes. He said there was considerable anxiety over the present position in the British Army in regard to this branch of military science. Since the statement in the House on the subject on July 18th a great deal of fresh light had been thrown on the value of the aeroplane for military purposes by the French manoeuvres on the Eastern Frontier last September. It was made evident by those operations that information could be obtained by means of aeroplane reconnaissance which could not be obtained in any other way. The right hon.

gentleman, the Under-Secretary for War, made a most unsatisfactory statement last week. In reply to a question he said that while the French possessed 200 aeroplanes, the total provision, present and prospective, for the British Army was only sixteen aeroplanes. At present, we appeared to have only ten effective aeroplanes, and only six officers in the Air Battalion were engaged in flying. We should have to purchase six new machines to get a total of sixteen. We were running grave risks in thus practically neglecting this important branch of military service.

Colonel Seely (Derby, Ilkeston, Min.) said the idea that there was any going back on the policy he announced some few months ago was quite erroneous. The War Office were going forward with the development of this new art with the determination to bring this country up to a high standard. They proposed to issue almost immediately the terms under which officers would be able to obtain positions as Army aviators. Any officer who passed the test and obtained the Aero Club certificate, for which, of course, he had to pay by attending aviation schools, would receive £75. He did not know that it would in all cases cover the whole expense, but in some cases it would more than do so. The officer who had obtained a certificate would then be attached to the Army Aeroplane Battalion for a course of instruction in the branches of aviation of special value for military purposes. It was important, for instance, that he should be able to steer a course in the air by star or compass, to draw an accurate map, and to steer by a map. At the end of that time if he succeeded in obtaining a certificate similar to the French superior military certificate he would become an Army aviator, and would be available for this vitally important service should the occasion arise. Those officers who had already joined the Air Battalion and received £50, although it had cost them more, would receive the extra £25 without delay. After these Army aviators had passed all these tests it was proposed they should be attached periodically to the Air Battalion for Army refresher courses, which he imagined would need to be pretty frequent. The hon. member wished to know how many aeroplanes we have and referred to the answer given to the question that we have sixteen, while France has 2000. He was glad to give that answer because he wished the House to know how we stood. Undoubtedly we had too few, and France was far ahead of the rest of the world. We had hung back because the War Office wanted to be quite sure before buying a great number that they were buying the most useful type. Of course, we could not continue to wait for an indefinite time, but it was thought they could afford to wait until they could decide upon the best type. They had in fact in various stages nineteen machines, though one, it was true, was broken beyond repair, and another was quite out of date, and others were more or less out of repair. What that had been trying to do was to see all the different types, and he had a list of them—of eleven different types, which Army officers and civilians attached to the Service had been examining. Some of the machines were very good, some were very bad, because they were very old, and upon some opinion had not yet been formed. Seven were biplanes and four were monoplanes. From all these types they had learned useful lessons, and were now testing the more speedy monoplanes. They had arrived very near a point when

they could see the best type for war purposes, and when the moment came—and it would be very soon—a large number of officers would be forthcoming. Of course the training for the Army was quite different from civilian training. The machine must carry two men—one to steer and the other to observe. The arrangements for prizes were now practically completed, and he hoped before the end of the year to announce the prizes the Government would offer. They fully realised the immense importance of the aeroplane scout. As it was now placed beyond the region of conjecture that aeroplanes could ascend in reasonable weather and enable observations of troops to be made, it was of vital importance to the country to have an adequate aerial service. That was fully realised by the War Office and by the Government as a whole, and both the Secretary for War and the First Lord of the Admiralty were giving their earnest attention, not only to the question of getting a good aerial scouting service for each department, but of co-operating fully in order to provide a really efficient aerial service for both the Army and Navy.

Colonel Yates (Melton, Opp.) asked whether the Government would reconsider the amount of £75 allowed for training. The cost of training had been said to be £100. Why should the wretched officers have that amount cut down by £25? He asked the right hon. gentleman to give, if possible, a little more than the actual cost. The right hon. gentleman had spoken of having an adequate number of aeroplanes, but had given the House no idea as to what that number would be. Would the present number of sixteen be raised?

Colonel Seely: It will be raised greatly; but I cannot say the exact number.

Colonel Yates asked how many officers had now been trained. Colonel Seely: We propose that at least 100 officers should be trained as observers and pilots, and with that number we propose to work in the first instance. In addition there will be, of course, non-commissioned officers and other ranks, who will also be trained in the service.

Sir H. Dalziel (Kirkcaldy Burghs, Min.) said the War Office had not encouraged the voluntary assistance of private aviators. He urged that the services of such persons should be utilised. A friend who was well known as an aviator had offered his services to the War Office, and they had been refused on the ground that he was too old, although his age was only 27 years. He had since received offers from two foreign Governments. Offers had been made to British flying men in connection with the war between Italy and Turkey, while Japan had also made offers to them.

Mr. R. Gwynne (Eastbourne, Opp.) asked that the War Office should encourage experiments by paying the expense of them.—[The Times, October 31st.]

Three of the eight officers have since returned to the Blériot school at Etampes, Lieutenant Boucher arriving at 12.20, and Lieutenants Lantheaume and Clerc at 2.10. They are preparing for further trips of this kind.

#### More German Activity.

Despite the secrecy with which work is carried on at the military school at Doberitz, it is known that fifteen officer-aviators have been appointed to undergo a special course of practice for long-distance cross-country flying. All these officers already possess their ordinary brevets, and are only a section of the German officer-aviators who have already passed their tests. *L'Auto*, of Paris, which is usually exceedingly well informed on German aviation matters, says that there are about forty certificated officer-aviators at Doberitz, and that the number is to be enormously increased next spring. If Great Britain is to hold her own in aerial defence a move must be made, and, thanks to our comparatively mild winters, we could easily train a hundred or more military aviators before the spring, while Germany is practically frost-bound.

#### The "Piou-Piou" and his Officers.

The French Army certainly does things otherwise than we do. One of the latest French pilots named Canac is now doing his two years' military service as a private of the line at Rodez. Like all French soldiers, his officers are as keen as can be on aviation, and as they know very little about it they have organised a series of lectures to be given to officers and men alike by Canac. One can imagine the officers of a British regiment sitting quietly and listening to a lecture on aviation by Private Thomas Atkins, who happens to be a capital aviator. However, after all, most of our Service men are keen enough on flying if only they had a little encouragement.

#### Military Aviation in France.

In an interview published in the *Matin*, M. Messimy, the Minister for War, has stated that the time of probation had come to an end for military aviation, and that of its final organisation had arrived. It was proposed, he said, to increase to a considerable extent the number of aviation centres, and aviators would play their part in all the Army manoeuvres.

Each one of the twenty generals commanding army corps would shortly have an aviation section at his disposal, and it was quite possible that one day every artillery regiment would have a group of aviators attached to it. The new system would demand a large number of aviators, and several hundreds would be needed next year. Pilots, M. Messimy stated, would be drawn not only from the officers who volunteered, but also from the non-commissioned officers, and full use would be made of civilian aviators in the reserves.

The *Matin* states that in a few days the decree conferring on officers an aviation allowance of £12 a month and on non-commissioned officers one of £6 a month will be published, while aviation service will count as active service.

#### A Way They Have in the (French) Army.

Eight officers of the Blériot military school at Etampes made a most successful "raid" on Wednesday of last week. In spite of a rather strong wind these officers determined to fly to Versailles and report themselves for the *visa-voce* examination, which has to be passed before they can get their superior brevet. The starters were Lieutenants de Bellemois, Van den Vaer, Lantheaume, De Geyer, Sylvestre, Boucher, and Clerc, under the leadership of Captain Félix, each flying a Blériot. They all arrived at the Camp of Satory without any mishap, everyone having made a non-stop flight.

# WINTER AVIATION.

To pay your expenses during the winter months

FLY AT

## **Brighton-Shoreham** **Aerodrome**

**NOVEMBER, DECEMBER, JANUARY and FEBRUARY**

Brighton Season in full swing.

Passengers plentiful at paying prices.

**FREE NOTICE BOARD IN ALL HOTELS  
FOR USE OF TENANTS.**

**Maximum Sunshine. Minimum Fog.**

**STEADY SEA BREEZES. NO GUSTS. NUMEROUS DEAD CALMS.**

Perfect Ground. Low Rents. Living Cheap. Large  
pleasure - loving population. Aviators are popular.  
Expert Engineers, Oils, &c., are available on the spot.  
Large water Surface available for Hydro - Aeroplanes.

APPLY :—MANAGER—

**Brighton-Shoreham Aerodrome, Shoreham, Sussex.**



## AIR CURRENTS.

## More Questions for Pilots.

THE AEROPLANE publishes these papers for the benefit of intending candidates for the examination for A.M.I.R.s (Associate Membership of the Institution of Reckless Remous Riders).

Time allowed, three weeks. Draw diagrams where necessary.

- (1) Explain any reason why an aeroplane will not fly?
- (2) Define "pitch," and state what relation it has to tar.
- (3) Explain how you would utilise your revolution indicator to ascertain the number of throbs per minute of your lady passenger's heart. State how much of this throbbing would be due to nervousness and how much due to affection.
- (4) In what language would you express your feelings in the following incidents:—

- (a) Someone has mixed water with your petrol.
- (b) You are being drenched to the skin by well-meaning persons pouring gallons of water on an engine which has back-fired into the carburettor.
- (c) A manufacturer has failed to send parts of your machine on the last date for an important prize.
- (5) Distinguish between a remou and a moo-moo. Which would offer the least head resistance to the machine in the event of running into either?
- (6) The floor of a hangar 50 ft. long is covered with castor oil. You start to run across it at " $\sqrt{V}$ " ft. per sec. Assuming 50 per cent. slip, when will you get to the other side? If the percentage is increased, why is it likely that V will equal O somewhere in the crossing?
- (7) What answers would you give to the following if by chance anyone should ask you:—
- (i) Is there going to be any flying to-day?
- (a) By a girl under 30 years of age.
- (b) By a small boy.
- (2) What is the difference between a biplane and an aeroplane?
- (8) What are the symptoms of air sickness, and what method would you employ to prevent the same while flying over inhabited areas?
- (9) Draw a diagram showing the path of a spiral vol-pan-cake, indicating the point of *bois cassée* with a St. John's Cross.
- (10) Explain how you would tune up an aeroplane to play selections from the "Count of Luxemburg."
- (11) What is the effect of flying on an aeroplane:—
- (a) If the tail is suddenly cut off.
- (b) If your engine leaves you when up?
- (12) Would the stopping of the motor on a 100 h.p. Gordon-Bennett Blériot give you a practical method of finding the value of the constant "g" for falling bodies? G. DACRE.

[No prize is offered for answers to these questions.—ED.]

\* \* \* \* \*

## Journalese as she is Wrote.

(From the "Daily Mail" in all seriousness, with interpolated remarks by THE AEROPLANE.)

"It was quite the most remarkable flight in my career," exclaimed Mr. Orville Wright yesterday, when he alighted from his new motorless glider. [Giders with motors being common in America.—ED., AEROPLANE.]

In the teeth of a fifty-mile wind, which drove to shelter even buzzards and other soaring birds and compelled the spectators to lie flat on the sands, the inventor rose in the air to a height of 200 ft. and remained aloft for 9 mins. 45 secs., finally landing at a spot 700 ft. distant from the starting-place. The feat was subsequently described by Mr. Wright as "astounding" in view of the fact that the glider he was using was still imperfect and improperly balanced. [This sounds like the modest Orville.—ED.]

Beyond stating that the latest Wright aeroplane is smaller than the ordinary model and is fitted with side wings, end planes, and a rear rudder with a 24-ft. spread—[A useful little rudder. That ought to satisfy P. K. Turner's wish for a rudder to overcome the warp.—ED.]—none of the special correspondents at Kill Devil Hill are able yet to give any detailed explanation of the improvements which rendered yesterday's performance possible. To set off the weight of the rear rudder a 5-lb. bag of sand swung at the end of a rod extending 8 ft. to the front of the airman's seat. [Or, in Orville Wright's case, about 7 ft. in front of his nose, or 5 ft. in front of his feet.—ED.]

The illusion as Mr. Wright remained practically motionless with the wind singing through the planes was perfect. [Who was illuded? The correspondents, Orville Wright, or the readers?—ED.] It was the seventeenth flight he had made in the course of the day, and Mr. Wright's machine mounted like a kite without requiring any impetus for starting its run. The inventor was seen to be working the warping levers at about the speed of a man rowing a boat—[Ah! That's what made him rise, you see.—ED.]—and the glider rose with each successive gust of wind until it reached a height of 150 ft., when it floated as steadily as a ship on a calm sea.

Finally, after remaining motionless at a considerable height for 5 mins. 11 secs., according to the Herald correspondent's watch—[I could not think of hanging any gentleman by an American clock.—G. B. SHAW.]—the airman descended with a long, graceful curve to a spot nearly an eighth of a mile away. [It was kind to bring the long graceful curve with him.—ED.] Perhaps the most dramatic feature of the flight was when a little grey-white flycatcher, about half the size of a sparrow and quite a swift flyer, wearied by the storm, sought refuge on one of the wires of the machine. [Truly dramatic! Mr. Arthur Collins kindly note for next Drury Lane drama. Strong men wept and reporters clutched their notebooks more firmly to their bosoms.—ED.]

\* \* \* \* \*

They were discussing food supplies at Weybridge (not referring to the Blue Bird, of course), and one slybarite said: "The cooking has gone down horribly at this place. Why, the dinner is no better than a lunch." "Yes," remarked the irresponsible person, "I suppose one might say that it had *dejeuner*-ated." And the effect on the Anglo-French aviator was almost fatal.

\* \* \* \* \*

Mr. Oscar Morison, having postponed his African visit till January, and having merely gone as far as Turin this month, the following effusion has arrived on Royal Aero Club newspaper:

"You did not go to Africa;  
Instead you went to Italee.  
Better in England, far, old boy,  
Than away in the regions of Ashantee."  
C. G. G."

[In spite of the identity of initials, the Editor is not guilty of the above.]

\* \* \* \* \*

## Boots by Aeroplane.

(Respectfully dedicated to the Aerial Parcel Postman.)

Boots and the 'plane let us gaily sing,  
For that's the latest and smartest thing;  
No more parcels by van or train,  
Order your boots by aeroplane!

Up they will go as the clock strikes ten,  
Bringers of bliss to the soles of men—  
Boots of your favourite sort and size,  
Boots that sail through the startled skies.

Said a bright young boot, "When we get to town  
Are we to be worn? What a sad come-down!  
We, who have soared in the boundless blue,  
To tread the earth with its dingy hue!"

"Ninety miles an hour!" quoth they;  
But the wind was high and the fog was grey,  
And the watchers at Hendon asked in vain,  
"Where are the boots—and the aeroplane?"

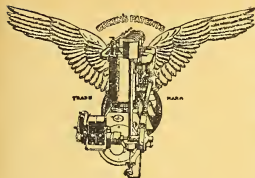
\* \* \* \* \*

"Look here, you chaps," said the rash young boot,  
"This fog may last till the wheels take root"  
(Boots have tongues, so, of course, they talk).  
"I think we'd better get out and walk!"

\* \* \* \* \*

Critic, avout with thy bootless scoff!  
Tell us no longer that "Boots are off";  
For the parcel postman has been, and gone,  
And critics are "off" and the boots are on.

M. L. E.



## A MISTAKE.

In our advertisement last week we stated that the British Michelin Cup had been won three times by Mr. Cody. This is not so. In 1909 it was won by Mr. J. T. C. Moore Brabazon with a "Green" Engine, and in 1910 and 1911 by Mr. Cody with a "Green" Engine. MARK YOU it was a "Green" Engine every time. It is a "Green" Engine every time when a success is scored. H.M. War Office have adopted the "Green" Engine.

FULL PARTICULARS  
ON REQUEST. !!!

**THE GREEN ENGINE CO.,** Sole Licensees under Greens,  
Motor Patent Syndicate, Ltd.,  
55, Berners Street, London, W.

Makers for the Patentes: The Aster Eng. Co., Ltd.

# GREEN'S ENGINES

**Special Offer**

OF

**TWELVE 35 H.P. GREEN**

PASSENGER CARRYING

**'Avro' Biplanes**

OR MONOPLANES

AT

**£400**

**each complete.**

Usual Price **£600.**

FOR FULL DETAILS SEE OUR ISSUE  
OF OCTOBER 12th OR WRITE

**A. V. ROE & Co.,**

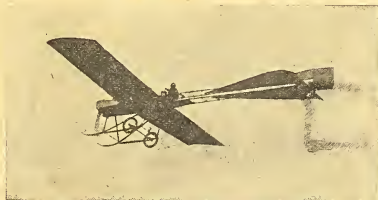
The Aviators' Storehouse,  
**BROWNSFIELD MILLS,  
MANCHESTER.**

Telegrams—TRIPLANE.

Telephone—698 CENTRAL.

## THE "DEPERDUSSIN" MONOPLANE

"The Aerial Yacht."



Single Seater Complete from £450 and upwards.

Passenger Flights—Cross Country Journeys  
on our 2-Seater Deperdussin Monoplane  
from Brooklands Aerodrome.  
The Best Passenger Carrying Monoplane.

### AVIATION SCHOOL AT BROOKLANDS.

Special terms to Army and Navy Officers.

Full particulars from

**THE BRITISH DEPERDUSSIN AEROPLANE SYND., Ltd.,**  
30, Regent Street, Piccadilly Circus, LONDON, S.W.  
Phone: 280 GERRARD. Wire: "MONOPE, LONDON."

**£750**

**READY**

**TO FLY**

## ... THE ... "Flanders" Monoplane

(TWO OR THREE SEATS).

(TUITION FREE TO PURCHASERS).

**60-80 Green Engine ("Circuit of Britain"  
type).**

**65 m.p.hr. (timed).**

**L. HOWARD FLANDERS, Brooklands, Weybridge.**



## The French Military Trials.

In spite of more wind and rain, a little flying was done on the 23rd. Gougenheim, on the repaired Henry Farman, made his first landing at Montcornet, doing the trip at about 60 m.p.h. with a strong wind behind. Some objections were lodged that he had not passed between the regulation starting posts at Reims, and the Military Committee held their decision over to next day. Barra, on the Maurice Farman, again tried for altitude, but after a terrible shaking up came down.

Starting news came from the Deperdussin camp during the day, namely, that Védérines, the Morane crack, was to take over Vidart's 100 h.p. Deperdussin, and that Wijnen was to take over the one originally driven by the Comte d'Hespele.

The Military Committee decided that the supplementary prize of 500 francs per kilometre per hour for excess of speed over 60 kms. per hour should be paid, not on the speed of the winning machines, but on the speed of each individual machine bought under the prize scheme when actually delivered to the Army. An excellent idea this, for it will effectually stop any attempts to scamp work on future machines, and will ensure every machine being tuned to the same extent as the winners.

*Apropos* of Védérines joining the Deperdussin firm, a somewhat amusing situation arises. The various sums won by him in the Circuit of Britain and in the British Section of the Circuit of Europe are, naturally, payable to the pilot himself. If he had won, the bulk of the prize would, under his agreement as pilot, have gone to the Borels, who make the Morane machine, but his various pickings as best loser, amounting to some £2,000, have been paid to him personally, and it now appears that M. Borel wants his share, which he might have got if Védérines had remained in his employ, but which will not be so easily obtained now that Védérines is flying for another firm.

On the 24th Renaux passed his second height test, and so became the third to pass all the qualifying tests. Barra, on the other Maurice Farman, tried for his second height test, but only reached 300 ft. in the 15 minutes. Gaubert, on the Astra biplane, landed at Montcornet, but failed to get out again, and so nullified his test. Desparmet, on the Blériot, broke some stay-wires on landing, and also failed for the time being.

During the morning Dubreuil, on the Hanriot, went off to do a trial landing without a passenger at Montcornet, but about two kms. out he was forced down by the wind and broke a wheel, and as he struck in the ground, a skid broke, and the machine turned over, the latter looking like an ugly accident, as which it was reported in the French papers, but when Hanriot, senior, and Anzani arrived on the scene by motor they found Dubreuil calmly taking his machine to pieces, and a couple of hours afterwards he himself brought it back to its shed on a wagon.

The only excitement of the afternoon was some fancy flying by Ehrmann, on the new Pivot, in a very bad wind.

Late in the day it was announced that neither Gougenheim nor Colliex had passed their first landing tests, owing to not having complied exactly with the regulations.

On the 25th nothing was done except engine tuning outside the sheds. Mahieu was the only man to fly, on his Voisin, and he was brought down by a deluge of rain. The day was even worse, for no one flew at all, so bad was the weather.

The 26th being somewhat finer, a number of aviators made fresh attempts, but, owing to the rain of the previous days, the landing ground at Montcornet was so cut up and soft that, after landing, it was impossible to get off again. In consequence many competitors asked the Military Committee to permit them to invert the order of flight and to go for the speed and height tests before the landing tests, hoping that the ground would dry in the meantime.

Altogether seven official attempts were made. Prevost managed to pass his first landing test on the 100 h.p. Deperdussin. Védérines, on the 80 h.p. Anzani-Deperdussin, started after Prevost, but was brought down by a hailstorm 15 kms. from the start. Wijnen, on the other 100 h.p. Deperdussin, came out just as the storm was at its worst, and only got a few hundred yards.

Other attempts were made by Frantz on the Savary and Colliex on the Voisin-Canard, but though both of them landed all right, neither of them was able to start out of the field again. Moineau, on the 140 h.p. Bréguet, went for his second landing test, and succeeded perfectly. Debuissy, on the Bréguet, with the 130 h.p. Dansette-Gillet, also started, but was forced by the wind to come back.

The day was made still more gloomy by the death of Desparmet, who was killed while flying the 140 h.p. Blériot. Starting from Betheny at 7.30 a.m. on an unofficial trial flight to Montcornet, and fortunately without passengers, he got as far as Pontgivat, and nearly a kilometre beyond, when, at 600 ft., his machine was seen to heel over to the right and then to dive suddenly. It came down on the side of the road from Reims to Montcornet, and Desparmet was picked up with a broken neck some yards away from his machine. Early reports spoke of a broken wing, possibly caused by a stay-wire breaking. Leblanc, who was on his way by car from Reims to Montcornet, arrived a few minutes after the accident, and inclined to the opinion that stoppage of the engine forced Desparmet to start a *vol plané* in order to land, and at that particular moment he was caught by a gust so that the machine was forced down to the ground before he got proper control over it. As Desparmet was carrying the full load on his machine, it is quite likely that, being somewhat unused to the control of such a big machine with so much weight on it, he was unable to bring it up quickly enough when near the ground, and so struck nose first. As he was picked up so far away from the machine it is evident that he was killed by being thrown out and not by the actual smash itself.

Poor Desparmet was only twenty-five years of age, and his brevet was No. 451, of March 3rd, 1911. He passed for his certificate on a Sommer under the tutelage of Kimmerling, but more recently he has been the Blériot chief pilot at Etampes. After de Conneau's smash he was called to take his place on the 140 h.p., already so unfortunate.

The 28th, in spite of being cold in the morning, turned beautifully fine in the afternoon, with the result that quite a number of successful tests were made. The first man out was Bréguet on the Bréguet-Salmon, who made his first landing quite satisfactorily. In the afternoon Prevost, on the 100 h.p. Deperdussin, went off for his second test, but returned on account of the hurricane raging in the valley of the Aisne by Neufchatel. However, three-quarters of an hour afterwards he started off again, and succeeded. A few minutes afterwards, Védérines, on the 80 h.p. Deperdussin, also passed the first test successfully.

Bréguet tried for his second test and landed all right, but was unable to get out again owing to having to start with the wind in his back; and Debuissy, on the 130 h.p. Bréguet, also failed to pass. Gougenheim, on the second Henry Farman, also made an attempt, but came down a few miles from the start.

Barra, on the Maurice Farman, went for his height test, and at the first attempt could only get up to 140 metres in seventeen minutes. He then had a second trial, but only got up to 150 metres. Moineau, on the Bréguet, also went for the height test, and actually passed it, but the needle of the barograph went wrong, and the Committee refused to give him the benefit of the doubt. According to the unofficial barograph Moineau actually got up to 550 metres in thirteen minutes. Quite a number of other machines were out during the day doing test flights, but none of them were of any particular note.

### Védérines at Marseilles.

Védérines, who has been flying his Deperdussin at Toulon for the benefit of the *Liberté* disaster, is, at bottom, a warm hearted little man, if a trifle theatrical in his actions, and on the 25th he flew over the wreck of the *Liberté* in Toulon harbour, dropping a wreath on to the wreck as he passed over it. This method of saluting the memory of the dead sailors is certainly rather a pretty act, and essentially French.

### Over the Apennines.

For several days Le Lasseur de Ranzy, the hero of the Valentia-Alicante and return flight, waited at Bologna with his former pupil from Etampes, the Baron Della Noca, to make the first passenger flight over the Apennines to Florence. The distance from Bologna to Florence is only about 62½ miles but the direct line takes one across the highest parts of the Apennines, Mount Simon, the highest peak, being about 4,250 ft. On October 20th the aviators accomplished the flight on their tandem two-seater Blériot, passing over the Col de la Fouta from the basin of the Po to that of the Arno. The weather was perfect for the flight, which took about an hour.



# AVIATION ACCESSORIES

Aneroids, from	-	-	-	£3	5	0
Do. with maximum hand	-	-	-	7	7	0
Do. combined with watch	-	-	-	3	10	0
Revolution Counters, aluminium	-	-	-	6	6	0
Do. do. brass	-	-	-	5	5	0
Clift's Compasses	-	-	-	10	10	0
Safety Belts, from	-	-	-	1	5	0
Helmets, from	-	-	-	1	5	0

**The Universal Aviation Co., Ltd.,**

Telephone:  
3504 Mayfair.

**166, Piccadilly, W.**

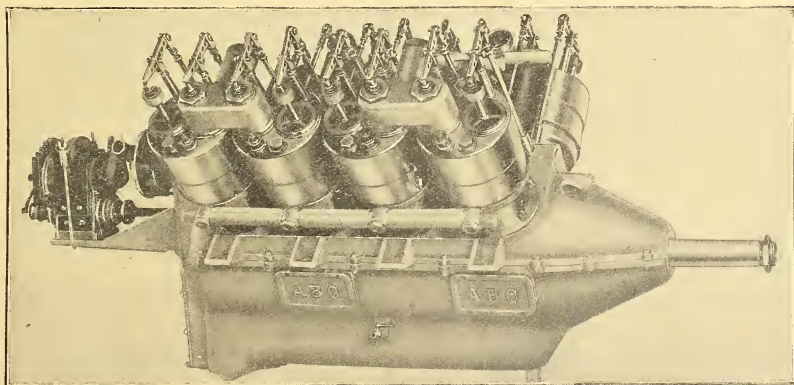
Telegrams:  
"Birdling, London."

## A. B. C. AEROPLANE ENGINES

Manufactured by the All-British (Engine) Co., Ltd

40-h.p. 4-Cyl. Vertical, £275; 80-h.p. 8-Cyl. "V" Type, £450.

(A 120-h.p. 12-Cyl. "V" Type, £675). Under 3 lbs. per B.H.P.



**London Agents:** The Universal Aviation Co., Ltd., 166, Piccadilly, W.

## The Week's Work.

### The Michelin Cup.

The Michelin Cup once more goes to Mr. S. F. Cody with his own biplane, and a 60-80 h.p. Green engine. The winning flight was made on Saturday last, October 29th, and totals 260 miles in 5 hrs. 20 mins., though the distance when further checked may be a shade more or less. The only other competitors to start were Mr. Graham Gilmour, who, unfortunately, ran a big-end bearing out on Salisbury Plain after covering about 20 kms.; and Mr. Ronald Kemp, who made four attempts. At the first attempt on Sunday morning his air-pressure pump came adrift at 25 miles. This was replaced by a hand-pump, and he then flew 65 miles, when his oil-gauge started leaking. On Tuesday he flew 27 miles, but was brought down again by oil-feed troubles, and after flying a few miles farther he was literally forced down by the wind. Both Michelin Cup competitions have been abject failures as competitions, thanks to the glaring mistake of finishing them

in October, which is notoriously the worst month in the year for wind and rain, as was pointed out by the present writer when the rules were framed. However, there could not possibly be a more popular winner than Mr. Cody, who thoroughly deserves his prizes.

### The Success of "Questions for Aviators."

The quantity and quality of the answers to the "Questions for Aviators," published the week before last, have altogether passed the most sanguine expectations. So great has been the number of papers, and so close has been the competition between the best of them, that it has been impossible for Mr. Manning and the Editor of THE AEROPLANE to come to a conclusion as to the best paper in time to make the result known in this week's issue. However, this shall be done next week, and Mr. Manning hopes to be able to present at the same time a further series of questions, which it is hoped will prove equally popular among readers.

### Monday, October 23rd.

**BROOKLANDS.**—Weather impossible in morning. In evening Pizey out on Bristol with Roberts for tuition, and then Fleming with Major Benwell, but squally weather prevented any further flying.

**HENDON.**—Blériot pupils out practising.

**THE PLAIN.**—Flying entirely out of question all day, violent wind, torrential rain.

### Tuesday, October 24th.

**BROOKLANDS.**—Raynham on Avro for short test flight, but weather too bad for any school work.

**HENDON.**—Pupils of Blériot School putting in hard work.

**HUNTINGDON.**—Roberts-Bruce out on Anzani-Blériot practising during short spell of calm.

**THE PLAIN.**—No improvement in weather. Work was, therefore, vigorously attacked in hangars.

### Wednesday, October 25th.

**BROOKLANDS.**—Pizey on Bristol, first out, as usual, for test flight, and then up with Roberts for tuition. Then Fleming out with Major Benwell and Roberts. Afterwards Harford doing figures of eight in good style. Deperdussin School out early, Wilkins rolling on taxi. In evening Garne doing circuits on brevet machine, Lieut. Porte, R.N., and Bell each doing test circuits on new 35 h.p. racer, which does about 60 m.p.h., and, later, Bell up to 400 ft. on the brevet machine. Raynham on Avro testing new propeller for Michelin Cup. Spencer and Ballard both on Spencer biplane. Rippen out again on Hanriot. Mrs. Hewlett flying the Blondeau-Farman, followed by Lieut. Hewlett, R.N., on same machine. Busy day for bad week.

**HENDON.**—Capt. Loraine brought out school Valkyrie and circled for ten minutes in spite of breeze; he flew very steadily and landed perfectly. Then Mr. Barber set out on Valkyrie 10 and rose to great heights, remaining up for twenty minutes, carrying out many effective evolutions and terminating with pretty spiral *vol plané*. Capt. Loraine then took passenger seat and Mr. Barber again ascended to good height and made several circuits. Towards dusk Mr. Barber flew same machine again, putting up flight of twenty minutes at an average of 500 ft., and landing cleverly *en vol plané* immediately in front of the hangars. Driver on 50 h.p. Blériot, which is to go to Africa, made fine flight. Hamel on new two-seater Blériot up with Mr. Norbert Chéreau as first passenger on this machine, flying over country till quite dark, lights of London and suburbs seen from above making fine sight.

**HUNTINGDON.**—Roberts-Bruce rolling on school Blériot. At 4:33 p.m., Moorhouse, on Blériot racer, arrived from Hendon, having left at 3:33 p.m. and having covered 5½ miles, measured in straight line. Actual course doubtful, as driven out of course by fog and mist when near Sandy. Average height, 3,000 ft.

**THE PLAIN.**—Conditions somewhat improved and Gilmour was first up on Bristol single-seater racing monoplane for 20 minutes. Julietot also up, but conditions were unfavourable for solo flying by pupils. Busted took Dacre for tuition flight. In afternoon Busted up for trial. Prier did remarkably fine performances on new Bristol military monoplane, which were exceedingly gratifying, especially under conditions anything but favourable. First flight, with Julietot as passenger, to 1,000 ft. in six minutes. School work commenced by Julietot taking Lieut. Ashton, a new pupil, for first flight, and afterwards with Lieut. Head, who has also just joined. Lieut. Joseph very fine solo, as also did Mellersh. Dacre next for first solo flight, during which he showed excellent progress, and landed skillfully at Fargo owing to motor stoppage. Julietot took Busted over to Dacre's machine, and the latter flew machine back with pupil as passenger. Gilmour, on military monoplane, made some very fine turns.

**FILEY.**—Scott out rolling, and had to content himself with more or less straight runs, owing to wind. School busy getting Oxley's new machine into flying trim, with intention of competing for Michelin Cup.

### Thursday, October 26th.

**BROOKLANDS.**—Fleming out on Bristol early for test flight. Then Harford practising figures of eight and showing excellent progress. At Deperdussin School fine flight by Bell, with Baldwin as passenger, on two-seater. After big circuit towards Woking against wind, came back fast and climbing steadily to Walton, and back to Brooklands, finding much wind high up and apparently standing still in air at times. Aneroid showed 1,200 ft., but height estimated by good judges to be over 2,000 ft. Finally landed with excellent spiral *vol plané*, making two complete circuits in doing so. Sabelli doing straights on taxi. Garne on brevet machine did three circuits, too low down, and, finally, in turning, dropped too much altogether, and demolished machine. Raynham on Avro out testing, but carburettor froze up, and forced a landing without damage. Ballard on Spencer flying excellently. Mrs. Hewlett flying well, and Lieut. Hewlett showing rapid improvement in straight lines.

**HENDON.**—De Villiers, of the Chanter School, out hopping.



The latest "Birdling" monoplane, with A.B.C. engine. Mr. Ronald Charteris, of the All-British Engine Co., by the propeller, is inspecting the engine prior to tests by Mr. H. J. D. Astley.



Morris rolling. Hamel flying on new two-seater Blériot. Blériot pupils at work as usual.

**HUNTINGDON.**—Moorhouse on racing Blériot up at 4,000 ft. over surrounding country in very nasty wind. Blown to a standstill over Godmanchester, and took ten minutes to do the last mile and a-half home against the wind. Later in day out for twenty minutes, again high up. Prospects of school good, at least half a dozen pupils to begin work as soon as more school machines are ready. Huntingdon magnificent centre from which to practise cross-country flying, and Radley and Moorhouse works, in charge of Mr. Jolly, able to build or repair machines as well as anyone in the country.

**THE PLAIN.**—Lieut. Joseph started Bristol work with three consecutive solos. Dacre also up *solus*, Mellersh following with two flights. Busted took Lieut. Head, and afterwards with Baron Roenne, reaching 800 ft. in each case. Prier did on military monoplane, and, with Jullerot as passenger, Grabette, made a circuit.

#### Friday, October 27th.

**BROOKLANDS.**—Bristols, as usual, started early. Pizey out teaching Roberts, and Harford doing solos. Fleming next out with Roberts, and then Roberts, a very quick and promising pupil, doing straight flights alone. Harford then started for certificate tests, but, wind getting up suddenly, was signalled to come down by instructors. Deperdussin also out early. Baldwin, Sabelli, and Wilkins all doing straight flights on taxi. Rippen training on Harriot. Frank Ballard, Spencer's first and very satisfactory pupil, did certificate tests in good, sound style, showing careful and thorough teaching. Lieut. Hewlett, R.N., making astonishingly quick progress, doing straight flights and circuits alone. Raynham on Avro had very bad luck. Started for Michelin Cup, and, after two circuits, carburettor again froze, landing him in sewage farm. Machine came down in soft ground and stuck quietly on its end, doing surprisingly little damage. Raynham "poured out" over the front of fuselage into deep gully, extracted unhurt, but somewhat annoyed. Pasley on British-built monoplane of Blériot type, flying exceedingly well, and getting up to over 300 ft.

**HENDON.**—Morris, of the Chanter School, flying in straight lines. This pupil has made remarkably rapid progress. Driver on 50 h.p. Blériot made his first monoplane cross-country flight, with Salmel, also on Blériot, in company. Capt. Loraine out on school Valkyrie at 7 a.m., making two circuits and figures of eight before descending. *Vol plané* descents now quite expert. School pilot put up pretty flight on Valkyrie 10 at 400 ft., and remained up for quarter hour. Wind soon became puffy, but not before Capt. Loraine had made several short flights on Gnome-engined Valkyrie racer. He handled his new mount splendidly.

**FARNBOROUGH.**—Very fine flight by S. F. Cody with Green engine, covering 160 miles. First attempt on Long-Distance Michelin Cup. Unfortunately brought down by a broken wire.

#### Saturday, October 28th.

**BROOKLANDS.**—Kemp out early doing straight flights in nasty wind, testing Flanders monoplane with new weight-carrying wings. Loaded up with 40 gals. of petrol and to gals. of oil, enough for about eight hours' flying. Machine lifting well, but needed minor adjustments. Out again in evening, but wind very bad, so would not risk a turn with full load in such a wind. Late in evening Fleming out on Bristol to test air, and, when almost dark, took up Lieut. Milner, R.F.A., as passenger, latter being delighted with first experience of the air. Walton-Edwards "Colossoplane" undergoing minor alterations and adjustments in shed, and now promising to fly quite well. Two-wheel and single-skid chassis standing up splendidly. Mr. Edwards showed the writer some new 4-in. tyres just received from the Dunlop Company, which are by far the best aeroplane tyres he has yet seen. As the fine aeroplane tyres are roughly made affairs, put together by hand, except when standard type motor cycle tyres are used, but the new Dunlops are properly moulded and made of beautiful material, immensely strong, and yet very light. Aeroplane builders who want large section tyres for small wheels should certainly investigate these, for two of them stand up admirably to the 1,700 lbs. weight of the Colossoplane. Percival and Billing now having parted company in a most amicable way, Percival is rebuilding the erstwhile Billing biplane with entirely new planes, and somewhat different balance. It should be a distinct success, and Percival may be expected to distinguish himself ere long.

**HENDON.**—Heavy fog prevented tuition before 8 a.m., when

it cleared sufficiently to allow Mr. Barber to bring out the Valkyrie 10. After several circuits he handed over machine to Capt. Loraine, who made most successful flight of three or four circuits, eventually landing *en vol plané* with his engine completely stopped. Lieut. Parke out circling in fine style. Hamel out first on single-seater Blériot, later with passengers on new two-seater Blériot. Driver and Salmel both flying well on Blériots. Latter up at 3,500 ft. away beyond Ealing. Former also making expedition over Ealing and Acton, returning in dusk. Hamel on Blériot taking passengers all afternoon, among them Messrs. Ernest Hardy, C. D. Forbes, Melburn, and Sacchi. Among visitors were Messrs. Sassoon, Spottiswoode, Colmore, Gilly, etc. Lieut. Parke on Farman took up lady passenger for couple of circuits. Later lent his machine to T. O. M. Sopwith, who flew *solus* and with Lieut. Parke as passenger. Chanter School busy fixing up new machine, which is to be fitted with one of the latest type 35 h.p. Anzani's.

**THE PLAIN.**—Strong wind in morning. At 4 p.m. Jullerot up *solus* on Bristol; conditions fairly good, but extremely cold. Gilmour out for 20 minutes on military monoplane with passenger at varying altitudes. In meantime Jullerot flew with Lieut. Head to Flagstaff Hill and back to sheds.

**FILTON.**—Pitton up on Bristol biplane, making several circuits and landing with splendid *vol plané*s.

**LANARK.**—Ewen flew from Lanark to Gorgie Farm, just outside Edinburgh, on Deperdussin. He left Lanark aerodrome at 3.45 p.m. and reached Gorgie Farm at 4.23. Distance about thirty miles. Ewen had a good trip, and landed safely in farm grounds. Machine was same on which he made his recent fine flight over the Firth of Forth from Marine Gardens. Golfers at Barberton and footballers at Juniper Green had splendid view of Ewen as he passed overhead in the direction of Edinburgh from west. Identity disclosed by name on wings. He flew beautifully at altitudes between 500 and 1,000 ft.

#### Sunday, October 29th.

**BROOKLANDS.**—Kemp on the Flanders was first man out, starting for Michelin Cup. After flying about twenty miles was brought down by pressure-pump of petrol tank coming loose. This was taken off and a hand pump fitted, and Kemp started again, flying splendidly at about 1,000 ft., but after flying another sixty-five miles the oil gauge developed a leak and threw a 3/16 in. stream of oil over everything, so his attempt was stopped for the day, as it was then midday and only about four and a-half hours of daylight remained. As soon as Kemp came down first time Lieut. Harford, R.A., went for certificate on Bristol. Did seven figures of eight first time instead of five, with a perfect landing, and eight figures the second time. Observers getting bored waiting for him to come down signalled him to stop, so he, thinking something was wrong, came down without doing height test. After Kemp's second landing, Fleming on Bristol out with pupils. Roberts doing up. Capt. Harrison doing solo circuits. Fleming also up with Capt. Longcroft as passenger. Early in morning Snowden-Smith went to Staines and back, and, later, Lieut. Hewlett, R.N., and Graham-Wood out on Blondeau-Hewlett school machine. Colossoplane also out, with Blackburn at helm, lifting well, but brought down by leak in water tank. This is probably the only machine which has ever gone through all its experimental stage with mechanic as well as pilot on board. During lunch Gilmour and Lang came in by car from Pirbright, where they had arrived in the Bristol two-seater monoplane from Salisbury Plain, being brought down by defective valves in the Gnome. Having accumulated mechanics and tools they went off again to put the machine right, but the rising wind and advent of rain prevented them from coming on to Brooklands. Late in the afternoon Snowden-Smith and Fleming made short flights, just to please the fairly large crowd which had been tempted to the aerodrome by the fine morning.

**THE PLAIN.**—Miserable day, but some flying possible in the morning. Gilmour went across-country on Bristol military monoplane, with Dashwood Lang as passenger. Machine perfectly stable in wind, which became very bad. Gnome valve troubles eventually forced a landing near Pirbright. School work in brisk progress during a few calm moments.

**FILLEY.**—Oxley had Michelin machine out to test, and believes he gets a speed of fully 65 to 70 miles an hour, for which it was designed. Weather turned rough in afternoon, so attempt for the Michelin had to be abandoned, but it was hoped that he would be able to make an attempt on Monday or Tuesday.



## CONCERNING PILOTS' CERTIFICATES.

The general conception on the subject of the test which an embryo aviator has to pass before he is awarded his *brevet* seems to me to be founded on a totally wrong assumption. It is, I understand, assumed that an easy test encourages men to join aviation schools, and, conversely, that a hard test keeps them away, and that this latter is bound to react disadvantageously on the progress of aviation.

The giving of the *brevet* is looked on as an act of mere encouragement to the aspirant, and care is taken that the test is such that it can be fulfilled without any very great difficulty.

Now I suggest that this view is totally wrong, and that the test to be applied before a man gets his *brevet* should mark a particular stage in his progress in the act of managing an aeroplane. The particular stage which I suggest should be selected is that in which he has learnt sufficient to be capable of taking an aeroplane across country with safety to himself.

The tests I suggest to fulfil this condition are these:—

(1) A flight, consisting of five figure-of-eight turns, as in the present *brevet* rules, with the additional proviso that the pilot shall completely cut his engine off at a height of not less than 100 ft. from the ground, and that the machine shall come to rest on the ground inside a distance of 150 ft. from a predetermined spot without the engine being restarted.

(2) The pilot shall make a *vol plané* from a height of 1,000 ft. with his engine completely cut off, the machine during this *vol plané* to make at least one complete turn in the air to either right or left; the machine to come to rest at not more than 150 ft. from a predetermined spot with the motor stationary.

(3) The pilot shall make a *vol plané* from a height of 1,000 ft. with his engine completely cut off, this *vol plané* to be carried out in any way the pilot chooses, provided the machine comes to rest within a distance of not more than 150 ft. from a predetermined spot with the engine stationary.

Now, with regard to rule 1: this is put in to ensure that the pilot can steer his machine in either direction with facility. In the present *brevet* rules there are two tests similar to this, and both alike. The second test I consider superfluous, as I do not think there is a single case on record where a man has made one set of five 8-shaped turns and has been unable to do a second set under similar weather conditions.

Rule 2.—This rule is put in to ensure that the pilot can do what is commonly termed a *spiral vol plané*. This, in the opinion of all experienced cross-country flyers, is an absolutely necessary accomplishment, which a pilot must possess before he attempts cross-country flying. Its use is this: it enables a pilot, in case of accidental motor failure, to reach a landing-

ground immediately beneath him, if, as sometimes happens, this is the location of the only likely landing-ground visible.

Rule 3.—This is intended to be a sort of check on No. 2. It may be argued that if a man can make a *spiral vol plané* he can also do a straight one; but there is the landing to consider. Perhaps a pilot may have been assisted by luck in landing in the right place in the second test. This luck is to some extent eliminated by making him go through test 3.

The height of 1,000 ft. is chosen for both these last tests for two reasons: first, that it is in the opinion of most cross-country flyers, generally speaking, the best height for cross-country flying; and, secondly, that if a man has got used to 1,000 ft., he has got used to any height.

I do not think that anyone will deny that a man who has passed these three tests has demonstrated that he has sufficient skill to start cross-country flying with safety.

I would also suggest that a sort of super-*brevet* be instituted, somewhat on the lines of the French military *brevet*, the tests being arranged so as to prove that the holder is a cross-country flyer of considerable experience; but this I do not propose to discuss further at present.

It will be seen that, according to these suggested rules, the tuition of a pilot divides itself naturally into two stages, the first being terminated when he has received sufficient tuition to fly safely across country, and the second when he is an experienced cross-country flyer; and this seems to be a much superior arrangement to the present, where the test is entirely arbitrarily arranged without special reference to anything.

It may be contended that rules of this kind would considerably limit the number of *brevets* obtained in the future; but I would point out that the same fears were entertained the last time the *brevet* rules were stiffened, and that they proved absolutely groundless.

Even if the rules had the effect of reducing the number of *brevets* obtained, it does not follow that this would be a disadvantage, for the holding of a *brevet* does not confer much distinction if this distinction is shared by too many.

I would, in conclusion, suggest another innovation; that is, that all pilots who hold *brevets* obtained under older rules could, if they wished, attempt these new tests, and if they were successful have their old *brevets* endorsed accordingly. This would prevent, to some extent, men who got their *brevets* some time previously, and who have done no flying since, posing as being equal in skill to those who are constantly practising.

W. O. MANNING.

## Mr. Ewen's Fine Performance.

Writing on the subject of his fine flight from Lanark to Edinburgh, Mr. W. H. Ewen says:—

"The start was witnessed by several hundreds at Lanark Aerodrome. Great enthusiasm prevails in Edinburgh and Glasgow, and Edinburgh people are hoping I may be able to fly back again this week. I am not awfully keen on the trip back, and you'll agree that it was a big flight to attempt on a 28 h.p. Anzani. I had to rise to over 1,000 feet to escape partly the trouble from the Pentland Hills, and, even then, I had a very busy time. In fact, at one time I almost thought I would come down, but made up my mind I would persevere through. I only wish I had a 50 h.p. engine and then I would be quick to try the first non-stop from Edinburgh to London. But, sad to say, my funds are not big enough in the meantime, and I have to plod on as best I can until some sporting investor comes forward to back things up."

Mr. Ewen's trip, with such a small engine, is one of the finest things yet done in this country, and it is to be hoped that under the new War Office policy he will get a very large number of pupils from among the officers in the Scottish commands, and so will be able to make his school the really great success it deserves to be after all his pluck and perseverance.

## The Royal Aero Club.

At the last meeting of the committee the following aviators' certificates were granted: 149, Lieut. A. F. A. Hooper (Bristol, Salisbury); 150, Lieut. H. A. Williamson, R.N. (Bristol, Salisbury); 151, Lieut. E. G. K. Cross (Bristol, Salisbury).

The conference of the International Federation will take place in Rome on November 25th. Among the subjects set down for discussion is the question of tests for aeroplanes. The suggestion, which emanates from the Aero Club de France, is that constructors should submit a pattern machine for

certain tests as regards construction and flying capacity, and certificates will be issued in respect of that particular type after satisfactorily passing the tests laid down. The Committee of the Royal Aero Club is in favour of the proposal in principle.

The Committee of the Royal Aero Club has appointed the Kite and Model Aeroplane Association the authority to govern models in this country for the year 1912. The Royal Aero Club has also offered a prize of £5 5s. for competition under the auspices of the Kite and Model Aeroplane Association.—HAROLD E. PERRIN (Sec.).

## A New "Dope."

The General Aviation Contractors, Ltd., write that they have just secured the exclusive British agency for the well-known "Novavia" varnish, as used by the leading aeroplane manufacturers, Vickers, Bristol, R.E.P., Morane, Caudron, Blériot, etc., for aeroplane work.

They draw attention to the following advantages of "Novavia" varnish:—1. It is water, oil, and petrol proof. 2. Once the wings are varnished the fabric will never relax in spite of heat, sun, humidity, and rain. 3. The fabric will not be spoiled by any dirt from the motor, nor by several acids. 4. It is non-inflammable. 5. When soiled with mud or any other ingredients, if washed with soap and water, the fabric will become as clean as before. 6. This varnish strengthens the fabric (about 300 kg. per square metre).

## Aeroplanes in Tripoli.

Captain Piazza and Lieutenant Moizi, with their *Béliers*, have already given a good account of themselves in Tripoli, having discovered several Turkish reconnoitring parties long before they got near enough to the Italians to acquire any information, and preparing a warm reception for them when they came in view of the troops. The early reports of sand covering the engines and putting them out of operation have proved absolutely false, as might have been expected.

### The Navy League's Aeroplane Proposal.

With reference to the effort of the Liverpool Section of the Navy League to raise a subscription to present an aeroplane to the Navy, the following correspondence has passed between the Liverpool Navy League and the Lords Commissioners of the Admiralty:—

From the Hon. Secretary, Liverpool Navy League, Tower Building, Water Street, Liverpool, to the Lords Commissioners of the Admiralty.

"August 10th, 1911.

"My Lords,—It has been suggested to the committee of this Liverpool organisation that the Liverpool Navy League might very appropriately at this time do a useful work by collecting the sum necessary to purchase at least one fully equipped monoplane, of the latest type, for the purpose of presenting it to your lordships for instructional or other Navy purposes, as you may see fit.

"I am writing to ask, before doing anything further in the matter, if your lordships would be so good as to accept an aeroplane from the Liverpool Navy League for the Navy?

"The members of this organisation, in submitting this suggestion, are actuated only by a desire to be of service in such way as they can, and believe that such a gift from them, resident in this great seaport and in Lancashire, might be acceptable and productive of good.—I am, my lords, your lordships' obedient servant, (Signed) ALAN FIELD, Hon. Secretary."

From the Secretary of the Admiralty, Admiralty, S.W., to the Hon. Secretary, Liverpool Navy League.

"September 22nd, 1911.

"Sir,—I have laid your letter of the 10th August last before my Lords Commissioners of the Admiralty, and, in reply, I am to acquaint you that they would be glad to accept the kind offer of the committee of the Liverpool Navy League to present a fully equipped monoplane for use in H.M. Navy.

"My Lords would suggest that the monoplane should be made to a design approved by the Admiralty and constructed under Admiralty supervision, also that no special conditions should be made which would limit the discretion of their lordships as to the use of the aeroplane. I am to add that a "Nieuport" monoplane, with 50 h.p. engine, would be suitable for their lordships' purpose.—I am, sir, your obedient servant, (Signed) C. I. THOMAS."

The reply from the Admiralty would be humorous if it were not tragic. It takes six weeks to answer a letter offering something for nothing, but the real point lies in the beautiful picture conjured up by the idea of some of the "experts" who were responsible for the Barrow dirigible going to the Nieuport works to "approve" and "supervise" the construction.

### Patents Worth Noting.

Messrs. Mathys and Co., the well-known Patent agents, kindly send the following extracts from two recent specifications, which should be worth noting for reference:—

No. 14937 of 1911. M. A. Farman. Steering Gear for Aeroplanes.—"This relates to means for mounting the tube of the steering wheel of aeroplanes, and consists in that the steering tube is square in section and slides longitudinally in ball bearings, the outer rings of which roll in the manner of rollers upon the outer faces of the tube, and that the bearings are caused by the tube to participate in its rotation around its axis upon ball bearings. The result of this mounting is extreme ease in the movements of the steering tube." This evidently refers to the horizontal sliding control tube of the Maurice Farman type.

No. 22710/10. S. F. Cody. Aerial Craft.—"This relates to a plane for aerial craft, in which the flexibility necessary to permit of both the upper and under surfaces thereof being simultaneously warped is obtained by curving the surfaces of the plane so that the cross sectional area thereof is a minimum at a place intermediate of the leading and trailing edges of the plane and gradually increases therefrom in the direction towards both these edges, such cross sectional area being taken at right angles to the direction of flight."

### The German Manœuvres.

Though the fact has been carefully suppressed in the German Press and has been passed over in the British newspapers, it is reported on quite good authority that the recent German manœuvres have entirely upset all the calculations of the German General Staff, thanks to the advent of aeroplanes. As is usual on such occasions, one side was intended to win, and everything was carefully elaborated to that end, the pet regiments and favourite generals being allotted to the winning side. Unfortunately, the general commanding the side which had been officially intended to lose happened to have attached to him two or three exceedingly clever officer-aviators. These air scouts obtained so much information about the "enemy"

that, in spite of smaller and generally inferior forces, their commanding officer was able to checkmate every move of the stronger side, and to force the umpires to credit him with a decisive victory. This result so impressed the important people at the head of affairs that Germany suddenly became considerably more civil to France over the Morocco business, and the German military aerodrome at Döberitz has since been more active and more secret than ever.

### Is it another Failure?

To quote a contemporary on another occasion, "Everyone must be filled with sympathy for the little band of pioneers at Farnborough" in the latest disappointment which is said to have befallen them. It is reported on excellent authority that the new Army dirigible *Delta*, the hope of the Balloon Factory, and the cherished child of its staff of presumably highly trained and experienced aeronautic engineers has, now that it is inflated, disclosed the existence of defects which will for some considerable period effectually prevent it from performing its intended functions as a military dirigible; though, doubtless, while carefully kept in its shed it will be quite a valuable asset as an important item in our military air fleet for the purposes of statements in the House of Commons.

It will be remembered that a few weeks ago the *Gamma*, which was quite a successful little machine as military dirigibles go, and had made two or three quite nice little voyages on still days, much to the elation of its constructors and crew, was deflated by means of its ripping panel, and so provided quite an interesting object-lesson in emergency deflations. The true inwardness of this manœuvre was that the authorities desired to have room, up till then occupied by the *Gamma*, cleared for the inflation of the *Della*. Naturally some pounds' worth of hydrogen were dissipated in the neighbourhood of Farnborough, but probably the same amount would have leaked away in the course of a week or two, so that is really immaterial, but at the moment of writing "No. 1 Section, Dirigible Company, Army Air Battalion, R.E.," or whatever its elaborate official title may be, finds itself without means of navigating the air, and in the useful position of illustrating the proverb that "It is well to be off with the old love before you are on with the new."



Mr. R. O. Abercrombie, a fine pilot of the Blériot.

### A Pilot Worth Watching.

Mr. R. O. Abercrombie, who some time ago passed his brevet tests with success on a Blériot monoplane, is not resting quietly on this achievement, but continues to put in a lot of practice at the Blériot School at Hendon whenever weather and his engagements permit. He now handles his machine beautifully, and is only waiting for a good opportunity to make a name for himself. When at Hendon recently the writer saw him flying the new type Blériot-Anzani, and from the way he manœuvred it one would have thought he was driving a 50 h.p. at least.



## Deperdussin Constructional Details.

The new single-seater Deperdussin, which recently arrived at Brooklands, is certainly one of the prettiest specimens of the light and simple aeroplane, both in design and construction, which has yet been seen in this country. It, therefore, seems very well worth while to consider the machine in some detail, and with the assistance of the accompanying drawings by Mr. Max Millar it should be possible to obtain a very fair idea of the construction of the machine.

Taking the machine as a whole, it will be seen that it has practically all its weight concentrated to what must be practically the utmost extent possible. The large illustration of the front of the machine will show how this is done. The engine is clamped on to the front of the fuselage, where it gets the maximum amount of cooling. Close up behind it are the petrol and oil tanks, and the pilot is so placed that his legs go underneath the tanks, which form practically a wind shield for him, so that not only are the weights concentrated but the bodies most likely to add head-resistance to the machine are concentrated also.

A point which is to be particularly noted in the construction is the method of attaching the skid struts to the fuselage. Each strut runs up inside a clamping plate, which is bolted through an aluminium distance-piece to wooden blocks on the side of the fuselage. The heads of the struts are grooved, and in this groove lies a steel cable on which the fuselage is slung, so that in the event of a rough landing the shock is distributed throughout the fuselage, instead of being concentrated at the points where the skid struts join. When flying, the weight of the chassis is taken by tension wires, as may be seen in the sketch. This cable-sling idea, which is patented, is one of the most ingenious in the machine, and is largely accountable for the fact that, though both the fuselage and the chassis are extremely light the machine will stand quite rough landings without coming to harm.

Another neat point about the machine is that the planes, instead of stopping short where they join the fuselage, butt up against an aluminium extension piece, which comes forward over the engine. This is cut away in the centre to allow the

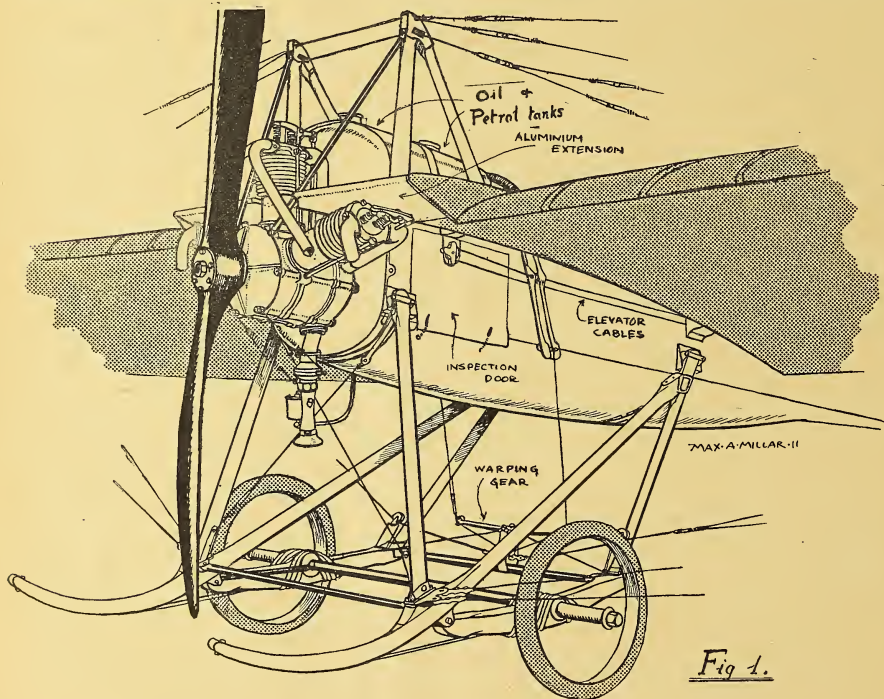


Fig. 1.

The fuselage of the machine, which is long and very narrow, is built on the ordinary wood and wire principle, but the wood is pierced as little as possible, so as to retain its strength where the chief strains come; and where more room is necessary for the pilot, a kind of cockpit, made of three-ply wood steamed and bent to shape, is fitted underneath the fuselage.

The front end of the fuselage and this cockpit is closed with a steel plate, and on this plate the engine is bolted. As a further stay for the engine two steel tubes are bolted to the crank case and carried up to the cabane.

upper part of the vertical cylinder to come through. Not only does this extension assist materially in lifting the machine, but it also carries all the oil from the supplementary exhaust ports down underneath the machine, instead of allowing it to be thrown up and back into the pilot's seat.

The chassis is carefully triangulated, and yet is so built up that in the event of any one member being broken it can be easily replaced, merely by undoing a few nuts. A small matter which, however, shows the way in which the design has been thought out are the little inspection doors on the side



of the fuselage, which allow access from the side to the rudder bar and tank connections. But for this little refinement these fixings would be exceedingly awkward to reach, owing to their position directly under the tanks and inside the fuselage.

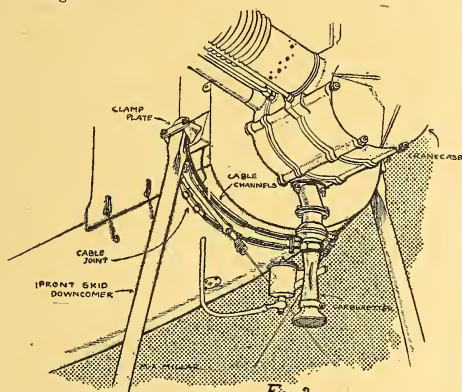


Fig. 2.

The Deperdussin type of control is now rapidly replacing in general use the more primitive lever arrangement, and is, therefore, worthy of particular attention. As may be seen, the warping wheel is attached to a cross-bar, which leaves everything clear inside the fuselage between the pilot's seat and the rudder bar. The warping wires, on reaching the chassis, terminate in a short length of chain, which runs over a sprocket on a clip attached to the rear horizontal cross-tube of the chassis, and are also secured to two wires running to the extremity of a rocking lever carried on the top of the same clip.

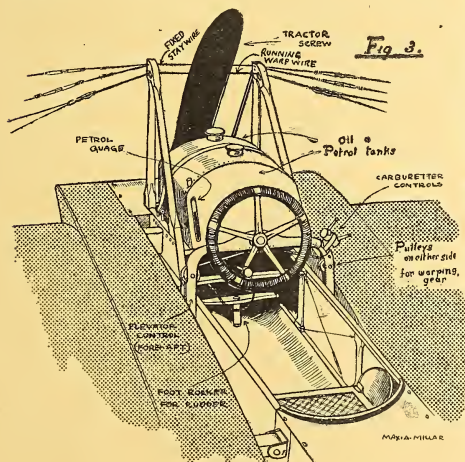


Fig. 3.

arch about half way up between the wheel and the bottom of the fuselage, and the whole arch rocks fore and aft on pivots fitted to the bottom of the square part of the fuselage, where the three-ply section joins it. This gives the pilot considerable leverage over the pull of the wire.

In order to make the pull double-acting, the wire is brought round a pulley some distance in front of the point at which it is fixed to the arch, and thence back to the elevator, so that when the wheel and arch are pushed forward they pull the elevator-flap down with a direct pull, and so raise the tail, and when they are pulled back they pull the elevator-flap up by the wire passing round the pulley, and so drop the tail.

It should be noted in Fig. 3 that the wheel is shown pushed forward as far as possible, so as to give a clear view of the foot rocker underneath. On the wheel is fitted the ignition switch, and on the side of the arch are the spark and throttle controls, everything being easily accessible, and yet no one thing interfering with anything else. In Fig. 2 it is interesting to note that the bolts which hold the engine in place to the front plate of the fuselage are also the same bolts which hold the crank case together, thus not only saving weight but making a neater job of the whole thing. The carburetor is bolted direct on to the bottom of the crank case, which makes it readily accessible, and the pipe from the carburetor passes up through the crank case to an internal manifold, whence it branches to each cylinder, so that the whole power plant is as compact and self-contained as it is possible to make it.

A point of considerable interest is shown in Fig. 4; that is, the attachment of the stay-wires to the wings. First of all, the steel plates which hold the cables are held up to the main spar by five good strong bolts, which have their other ends through a corresponding plate on the top of the wing, so that the main spar and the rib at that point are clamped together and share the strain.

The method of attachment of the wires themselves to this plate is also peculiar to the Deperdussin, and exceedingly effective. The two bolts shown in the sketch pass through a couple of links like the links of a cycle chain; between these links the cable is passed, going round first one bolt and then the other. The bolts are screwed tight, clamping the cable between them, and the whole thing is then sweated up into a solid mass, the result being a joint which is rather stronger than any other part of the cable, and yet leaves, at its outer end, a hole through which a bolt can be passed to attach it either to the plate direct, as is done with one wire, or to a wire strainer, as in the other which is shown.

An interesting detail about the machine is shown in Fig. 5, which explains itself when taken in conjunction with Fig. 1. This shows the point of junction of the forward vertical skid strut (or "front downcomer," as Mr. Millar prefers to call it), the main diagonal strut, and that section of the skid which carries the axle. The front downcomer fits into an aluminium socket, which is only subject to compression. Below it are the plates carrying the main stay wires to the front spar, and below that again is the trapped end of the tubular cross strut, all bolted through to a steel jaw-plate, to which is bolted the axle carrier.

The neatness of the general design and the clever way in which multiplicity of detail is avoided are shown by the way in which the outer end of the steel plate holding the main stay-

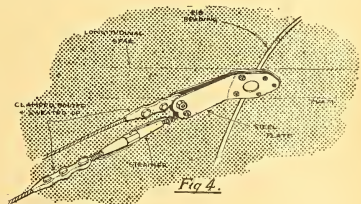


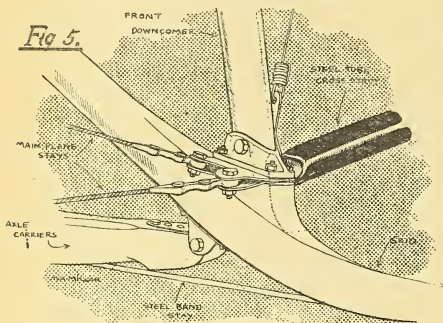
Fig. 4.

From the ends of this rocking lever the warping control wires run up the sides of the arch which carries the control-wheel, pass over a pulley on each side, and are there attached to a drum on the axle of the wheel.

The fore and aft control wires (Fig. 1) are fixed to the wheel

wires is carried out and up on the other side of the strut to form a connection for the lower end of one of the diagonal bracing wires. The forward end of the skid, it should be noticed, is connected to the axle carrier by a steel band, which acts at once as a stay and as a skid shoe.

The Deperdussin wings are admitted even by the firm's most captious critics to be exceedingly well built, and those who have seen the way in which the school machines are knocked about by the pupils at Brooklands have to admit that, light as the machines are, they must be exceedingly tough, and that nothing short of a genuine direct smash will affect the rigidity and tautness of the wings in any way.



The writer wishes to make here and now a public confession of the fact that, although he was not particularly favourably impressed with the racing machine on which Mr. Porte started in the "Circuit of Britain," he has, since seeing the school machines and the two-seater, considerably revised his opinion of the Deperdussin machines in general, and regards them, both in constructional detail and general design, as one of the four best machines of Continental construction which have ever been seen in this country. Each of the four has certain points in which it may be considered superior to the others, but between them, on balance, there is very little to choose.

Lieut. Porte, R.N., and Mr. Lawrence Santoni are certainly out to make a success of their school at Brooklands, for they have undoubtedly as fine a selection of machines for pupils' use as any monoplane school in the country. For passenger-carrying, the big two-seater is certainly one of the finest machines yet seen, and Mr. Gordon Bell, the chief pilot, is an exceedingly steady and useful flyer. Still further developments are likely in the firm, and the British Deperdussin Syndicate should become one of the most successful businesses in the country.

#### A Suggestion for Winter Work.

Owners of passenger-carrying machines who want to pay their expenses comfortably during the winter would do well to consider the possibilities of the Brighton-Shoreham Aerodrome. This aerodrome, which is said to be the most spacious in this country, offers exceedingly tempting terms so far as shed rents are concerned. The chief attraction from the passenger-carrier's point of view is that during the four winter months the Brighton season is in full swing, and passengers at paying prices are likely to be plentiful, if one may judge by the success of several aviators last year, notably Mr. O. C. Morison, who took up no less than thirty paying passengers in one afternoon and the following morning on his Bristol.

A further point in favour of the Brighton-Shoreham Aerodrome is that Brighton possesses a maximum of sunshine and minimum of fog. On the calm winter days, when the London district is covered with fog, it is probably bright and sunny at Brighton, and yet, in the winter at any rate, there is no fear of heat *remous*. If there is any wind at all it is a steady sea breeze, so that flying is quite safe in a wind speed which, inland, would be cut up into gusts by hills and trees. All along the coast from Brighton westward there is fine open country for cross-country flying. There is a special station at the aerodrome with an excellent service of trains to Brighton and Worthing, so that passengers can get there easily, and cross-country passenger flights, which pay even better than aerodrome passenger flights, can be made with as much ease and safety as if they were made inside the aerodrome itself. Aviators are particularly popular in the Brighton district, and the people in the locality are probably more enthusiastic about

aviation than those in other parts of the country, so that altogether a good deal of flying ought to be done there this winter. To help tenants in obtaining passengers, the proprietors have arranged with the Brighton Hotels Association that every hotel will display a notice-board on which shed-holders may post up any notices they wish, concerning their doings, machines available, prices of flights, and so forth.

#### Concerning the Spencer Biplane.

Mr. Herbert Spencer writes that the representatives of Farman Frères object to his machine being known as the Spencer-Farman. It should be pointed out that this designation has been occasionally used in *THE AEROPLANE* because the machine is, in its lines, of the type commonly known as "Farman." As a matter of fact, in details both of construction and design, it differs very materially from the Farman, being 6 in. less in the chord and about 2 in. less in camber. It also has extremely well-constructed double-surfaced planes. Whether due to these alterations in design or not one cannot say for certain, but the fact remains that the machine flies very much faster, and climbs with considerably greater ease than any Farman machine of its size which has yet been seen at the British aerodromes.

#### A Test of Strength.

Too late for publication in last week's issue came a note to the effect that on Saturday of the previous week, while Mr. Hucks's Blackburn monoplane was being got ready for flying at Gloucester the storm which was blowing caught hold of the canvas hangar in which it was stabled, and lifted both the machine and the hangar clear of the ground, the mechanics having to run for their lives. When the gust subsided the canvas of the tent was hanging on top of the machine and the planes. Nevertheless, the machine stood the load all right, and by half-past four in the afternoon it was ready for flying again, and Mr. Hucks made three short flights in a very strong and gusty wind, just to appease the crowd.

#### The Aerial Missionary.

That the aeroplane is now able to stand really hard wear is amply demonstrated by the tour in the West country which Mr. B. C. Hucks and his Blackburn monoplane have just completed.

Starting on August Bank Holiday, he has visited Taunton, Bournemouth, Minehead, Weston-super-Mare, Cardiff, Newport, Cheltenham, and Gloucester, and in spite of the grounds and the weather, only two days out of the thirty advertised for flying were too bad to stop him from flying.

Altogether just on ninety separate flights have been made, covering an estimated distance of over a thousand miles. The only accidents during all this varied flying were caused through a wheel rolling off the landing chassis into the revolving propeller, and a very slightly damaged wing through touching a hedge. Otherwise there has been absolutely no hitch whatever, and beyond looking travel stained and scribbled over with signatures the plane looks none the worse.

A large amount of cross-country work was also put in during the tour, as four of the towns visited were "planned" instead of training it, and there were several point-to-point jaunts and three flights across the Bristol Channel.

This undoubtedly constitutes somewhat of a record, as flying under such conditions and ordinary aerodrome work are vastly different, especially in the matter of ascents and descents, which have been made from and on grounds (in many instances deep ridge-and-furrow) upon which anything but the most perfect handling would have wrecked the strongest chassis.

The whole performance reflects great credit to Mr. Hucks as an aviator, and the general excellence of the Blackburn monoplane as a machine to stand really hard wear.

The greatest interest and enthusiasm has everywhere been shown by the public, but, owing to the fact that so much can be seen from outside without paying for admission, the financial side of the tour has suffered somewhat, and really very little money has been made. However, it is something to have paid expenses and to show a balance on the right side.

During this tour one of the most surprising things was the large percentage of the public who, having never before seen an aeroplane, became real enthusiasts, visiting the ground on every possible opportunity. The least that can be said about Mr. Hucks's tour is that it has opened the eyes of many thousands to the possibilities of aviation, and, therefore, all who are really devoted to the new sport and science owe a debt to Mr. Hucks and to his manager, Mr. C. E. Manton Day, for the valuable service they have done in educating the people of the West and acting as aerial missionaries.



## An Education in Aviation

can be obtained from the following books:—

**"The Art of Aviation,"** 10/6  
By R. W. A. BREWER ... ..

**"Monoplanes and Biplanes,"** 12/6  
by GROVER LOENING ... ..

**"The Aeronautical Classics,"** 1/- EACH  
Six numbers, by Sir GEORGE  
CAYLEY (1810), WENHAM (1840),  
and other early writers ... ..

By post from

**THE AEROPLANE, 166, PICCADILLY.**



No. 715. Size: 7 1/2 x 4 1/2 x 2 in.  
10/6 of all Chemists

## Be Prepared for Accidents

### 'Tabloid' First-Aid

(Trade Mark) BRAND

Extremely portable outfits of timely bandages  
dressings, restoratives, etc., for Aviators.  
From pocket-cases to aerodrome equipments.

BURROUGHS WELLCOME & CO., LONDON

## Clift Aero Maps.

Used in the "CIRCUIT OF BRITAIN" and all Cross-country flights **Clift Maps** were used by Vidart, Kimmerring, Valentine and others in the European Circuit, and by the majority of flyers in the British Circuit.

## HOWARD T. WRIGHT,

110, HIGH STREET, MANCHESTER SQUARE, W.

Telephone—8574 Gerrard.

### WINNER OF DE FOREST PRIZE.

Eight Types. . . .

## Monoplanes

from 40 to 80  
miles per hour

## Biplanes : :

from 36 to 50  
miles per hour

CATALOGUE ON APPLICATION.



## BLERIOT

### MONOPLANES

THE MOST SUCCESSFUL OF ALL AEROPLANES.

#### Some Victories of "1911"

Paris—Rome: 1st—BLERIOT. 2nd—BLERIOT

Circuit of Europe: 1st—BLERIOT. 2nd—BLERIOT

Circuit of Great Britain: 1st—BLERIOT

Circuit of Belgium: 1st—BLERIOT

Moscow—St. Petersburg: 1st—BLERIOT

London—Brighton: 1st—BLERIOT

Hendon—Brooklands: 1st—BLERIOT

London to Paris in one flight (3 hours, 56 minutes) on

**BLERIOT,**  
etc., etc.

CATALOGUE FREE ON APPLICATION.

TERMS FOR TUITION AT OUR LONDON  
SCHOOL OF AVIATION SENT ON DEMAND.

**FREE TUITION TO ALL BUYERS OF BLERIOTS.**

All Correspondence to be sent to:

**L. BLERIOT,** Sole Manufacturer,  
PARIS & LONDON

Head Office for the British Empire:

**BELFAST CHAMBERS, 156, Regent St., London, W.**

General Manager: NORBERT CHEREAU.

## MULLINER

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

**AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.**

Sole Agents for **NORMALE PROPELLERS**

The Most Efficient  
Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race, the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA.

TELEGRAMS: "AERO-RAFT," LONDON.

## 'Blackburn' Monoplanes & Propellers.

TUITION.

Mr. B. C. Hucks' double non-stop flight from Weston-Super-Mare, across Bristol Channel to Cardiff and back, was made on **BLACKBURN** monoplane fitted with **BLACKBURN** propeller.

'Phone: 2822 Central.

**The BLACKBURN AEROPLANE CO., Balm Road, LEEDS.**

Telegrams: "Propellers," Leeds.



## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

### Dangerous Flying.

Sir,—I think your correspondent, "An Old Westminister Boy," misunderstood my letter, which appeared in your issue of October 10th, about the dangerous flight over Harrow. I did not complain of the personal risk, but of the harm that would be done to aviation if such an accident took place.

You know the semi-panic that arose after the Issy accident. How much greater would it be if that flyer had killed some dozens of Harrow boys. Not that Harrow lives are more valuable than any others, but because at Issy the people were there of their own free will and appreciating the risk, while here it was exactly the opposite.

You could imagine the headlines in the papers on the next day and the dozens of people prejudiced ever afterwards against aviation. I expect "Q. V. B." knows the harm done to the railway movement by the fatal accident to Mr. Huskisson.

You could imagine a law being passed in record time practically forbidding cross-country flying in England.

The old red flag law hampered motoring in England to such an extent that we have not yet made up lost ground; and how much more would a strong, repressive law hamper aviation?

If courting danger is the prerogative of youth, then let it be courted in such a way as to harm no one else. I do not mind danger myself, but I am careful that that danger does not hurt anyone else.

"HARROWIAN."

### C.R., C.P., C.T. and C.G., and Freak Models.

Sir,—I have always made a point of reading the correspondence columns of technical papers, as one often finds in them much instruction and interest. On the other hand one often comes across a wrong-headedness so obvious that it is impossible to refrain from due chastisement. There were two excellent examples of this in your issue of October 26th. Let us take them one by one and attempt to sort out from the polysyllabic avalanche such ideas as their writers possess.

First, Mr. Ernest Warde-Fox, under the mystic title of "C.R., C.P., C.T., C.G.," has written a letter purporting to deal with the design of aeroplanes, and gives as a reason why so few aviators attempt slow-speed records simply the fact that fast flying naturally appeals more to them than slow, entirely ignoring the fact that if a pilot, in attempting to get a slow flight, let his machine become the merest trifle to much *cabré*, he will perform that form of *atterrissage* known as a fall slide, and so unpleasant in its consequences that its mere mention is taboo within the precincts of the Aero Club.

Again, he challenges our weird friend, "Ventre-à-terre," for harping on the term "centre of drift," and prefers apparently to say "centre of resistance," wasting a great part of one of his priceless paragraphs in discussing this purely immaterial point, the remainder of this paragraph being occupied with the extraordinary dictum that the position of the centre of drift of the machine is comparatively unimportant as compared with that of the other assorted centres which he mentions.

He also states that he cannot call to mind any machine which has its resistance centre exactly in its proper place, apparently oblivious of the fact that there are no figures sufficiently accurate to enable one to measure the centre of resistance.

He also presents to us two diagrams of an extraordinary machine, presumably of his own design, in which the line of thrust always remains horizontal, however much the machine, as a whole, tilts up or down. One presumes that he has the engine suspended on the pendulum principle, in which case he might possibly attain his automatic stability by interconnecting it with the controls.

On these diagrams he bases a trend of reasoning which, even if it were sound (as it is not) as an example of reasoning, can obviously have no earthly bearing—or aerial bearing either—on a normal machine, the thrust of whose propeller remains fixed as regards the line of flight.

Passing now to Mr. Robert P. Grimmer's irritated eruption in the same issue, one is inclined to disagree with his query to "Roy" as to whether he is "aware of the fact that the kind of propeller which might be a great success on a 'freak' would very often be perfectly useless if applied to a symmetrical model or a full-sized machine."

One is tempted to ask Mr. Grimmer (since, apparently, he claims to know something of aviation) whether he, in his turn, is not aware that the same propeller which is a success on one machine will often be a total failure on a sister machine with a duplicate engine.

Presumably Mr. Grimmer means that whereas the most successful propeller for a rubber-driven model is usually one with a pitch ratio of nearly three, in a full-sized machine the most frequent pitch ratio is less than one.

The reason for this should be obvious to anybody, however moderate his intelligence, who considers the question for a moment. It is simply this: In a model one can arrange one's motor to deliver power at any chosen rate, and hence can select the most efficient propeller and make the motor to suit it. In full-sized work the revolutions of the engine are fixed, and so the propeller must be designed to suit them, or gearing must be used.

Another point of similar obviousness, which, nevertheless, seems to have escaped Mr. Grimmer, in spite of the "pages and pages of algebraical calculations" of which he speaks, is that if in a model the weight of rubber used is proportionate to the weight of the frame which will stand its pull (a relation which is true both in theory and in practice), then the model will fly almost exactly the same distance with propellers of any diameter whatsoever. The difference in distance is not that due to the difference in power, but simply to the fact that for a given type of propeller there is one pitch ratio which is the most efficient.

His statement that it would have been far easier merely to cram on the power is thus pure foolishness, since the addition of more rubber would simply have necessitated having a stronger frame to stand it, and stronger wings to stand the increased speed, until the extra weight of these perfectly neutralised the gain of extra power.

Hitherto I have used Mr. Grimmer's word "power" as synonymous with rubber. I have done this simply that my remarks might fall within his comprehension. As a matter of fact, every schoolmaster with any idea whatsoever of teaching is most careful to rub into us while we are young that power is simply the rate of doing work, and that to add static energy to a machine, as is done by putting on more rubber, does not of necessity affect power in the slightest.

For example, by doubling the length of the rubber strands the energy in the machine, when fully wound, is doubled, but if the same propellers are used they will take twice as long to run down, and the rate of doing the work—that is, the power—is unchanged.

In conclusion, I would congratulate Mr. Grimmer on his final litany, which, even if wrong-headed, has at least one saving virtue, that of humour.

ESELBRÜCKEN.

PIFFELFLIEGER.

### More Pilots Wanted.

Sir,—Certainly your criticisms upon Mr. C. C. Turner's remarks in the *Observer* on the above subject are decidedly just. But there is another aspect of the matter, and that an important one, which deserves consideration from all who have at heart the advancement of the science of aeroplane construction and the art of aviation.

If there be an undue limitation of pilots, there must of necessity be a restricted output of machines, and an industry which should develop means of employment on the largest scale must consequently remain comparatively insignificant.

It would appear a reasonable suggestion that the higher certificated aviator should combine skill in practice with that scientific knowledge of which you remark that "quite a number of good flyers are exceedingly ignorant."

The minor certificate should be granted to the aviator who can be depended upon to control his machine and travel confidently from point to point, over well-known areas, by recognised landmarks. Such a pilot would be of service in the transport of passengers and material over such well-defined routes; but, while he would thus be exceedingly useful, he would certainly not approach in knowledge and capacity the higher certificated aerial navigator whose advent is close at hand.

I fear that the number even of the minor pilots will not show a very rapid increase with the present type of machines.

These impose, by their need of incessant attention in so many different directions at once, so great a strain that the minor pilot must possess not only a mind capable of intense concentration, but, also, courage in a high degree, and an ability to act with judgment and rapidity; and these qualifications are not common.

It is very surprising that manufacturers do not recognise that the production of a machine possessed of automatic stability would give a tremendous impulse to their business; it is even denied by some that automatic stability is desirable; but it is certain that if a machine which was automatically stable could be produced the minor pilot need not have the high qualifications I have mentioned.

Men of inferior capacity are in the majority. With the automatic machine, thousands of these could be turned into capable pilots; thousands of machines would be needed; and an industry would come into being which would benefit thousands of workers, and extend to the general public one of the greatest conveniences of civilisation.

Haywards Heath. L. BEAULIER GOLDMAN.

## The Speed of Aeroplanes.

SIR,—I read with interest the article on "The Speed of Aeroplanes," in THE AEROPLANE of 26th inst., and it would appear that there are rather serious errors in this:—

The first equation  $V = \frac{CL}{A}$  means, of course, that the speed varies directly as the total weight, and inversely as the area of the supporting planes, and neither of these is a safe assumption.

The writer admits that this formula "cannot be expected to give results nearer than within 10 m.p.h.," and this is surely not exact enough to be of any value. Further on we are given the equation for drift  $T = K A a^2 V^2$  and this does not accurately account for the head resistance of the non-lifting parts of the machine [i.e., fuselage, chassis, struts, stays, etc.] which should not be included thus as part of the head resistance of the lifting surfaces.

Moreover, though it is not a large error, the K value for the "lift" of a plane is not generally the same as for its "drift."

Again, it is stated that—"for practical purposes it is sufficiently accurate to take this [i.e., the thrust horse-power] as half the engine h.p."

Surely it is not sound to calculate the speed of the machine, which varies as the cube root of the thrust-horsepower, from such a rough assumption?

As a matter of fact, Sir Hiram Maxim found [see "Artificial and Natural Flight," pp. 37 and 41] that—thrust  $\times$  pitch speed = horsepower transmitted to propeller. So unless the propeller employed be so small that a 50 per cent. slip be needed to give the required flight thrust, this value for propulsive efficiency is too low.

I trust I will be pardoned for these criticisms of a very clearly written and instructive article, especially as it does give a very simple method of obtaining the approximate speed, which is, perhaps, all that your correspondent wanted.

But I venture to do so because we ought, with our present knowledge and data, to be able to calculate with a great degree of accuracy the speed of an aeroplane; the following is the method I should suggest for a designer.

First, it is necessary to calculate the head resistance  $r$ , for any velocity  $V$ , of the whole aeroplane except the supporting surfaces. This is made up of the head resistance of the fuselage [if there be one] of the chassis, of non-lifting directional surfaces, of struts, wiring, engine [if exposed], aviator's head and shoulders, etc. etc.

Now  $r$  is independent of total weight and supporting surface, and, of course, it varies as  $V^2$ .

So it is necessary to calculate its value,  $r$ , at a velocity  $V_1$ , which may be done in detail very accurately from experimentally determined data, and having done this we have it that, generally,  $r = \frac{V^2}{V_1^2} r_1$  .....(1)

secondly, for the supporting surfaces:— their head resistance or "drift,"  $d$ , does depend upon total weight,  $W$ , and area of supporting surfaces,  $A$ .

For:—Lift of supporting surfaces,  $L = K_1 V^2 A \tan \alpha$  .....(2)

Drift of supporting surfaces,  $d = K_2 V^2 A \tan^2 \alpha$  .....(3)  
where  $\alpha$  is the angle of incidence.

For values for the constants  $K_1$  and  $K_2$  assuming that  $\alpha$  will lie between the limits of 6 degrees and 9 degrees, we

must again consult experimentally determined data for planes—as given in M. Eiffel's valuable book.

We now have that, at velocity  $V$ , total head resistance

$$R = d + r = K_2 V^2 A \tan^2 \alpha + \frac{V^2}{V_1^2} r_1 \dots\dots(4)$$

whilst propeller thrust

$$T = \frac{H}{(1+S)} V \dots\dots\dots(5)$$

where  $H$  is brake horsepower at propeller shaft, and  $S$  is "slip ratio,"\*

And for steady flight

$$(a) \dots\dots R = T$$

$$\text{or } \frac{H}{(1+S)} = V^3 \left[ K_2 A \tan^2 \alpha + \frac{r_1}{V_1^2} \right] \dots\dots(6)$$

$$(b) \dots\dots W = L$$

$$\text{or } W = K_1 V^2 A \tan \alpha \dots\dots\dots(7)$$

From these two equation (6) and (7), if we know  $H, W, K_1, K_2$  &  $\frac{r_1}{V_1^2}$  and choose values for  $A$  and  $S$ —we can

determine corresponding values for  $V$  and  $\alpha$ .

\*This value  $S$ , which is, of course  $\frac{V-V}{V}$  where  $v$  is pitch

speed of propeller and  $V$  is speed of aeroplane, depends upon the type, diameter, and pitch of the propeller. Having decided upon the type and approximate diameter we can assume a fairly accurate value for  $S$ , which we can check by the results of our calculations.

The following is an example of the calculation for a monoplane with covered-in-fuselage, directly driven two-bladed tractor, non-lifting tail.

Given:—Total weight ... ..  $W = 1,000$  lbs.

Brake horse-power of motor, @ 1,200 r.p.m.  $H = 40$  h.p.  
= 22,000 ft. lbs. per sec.

First, to calculate $r_1$ in detail:—	Head resistance in lbs. at 60 ft. per sec.
Fuselage, approx. stream line form, 4 sq. ft. in cross sectional area ... ..	12
Struts, skids, wheels, wiring, etc., of chassis ... ..	20
Stays to main plane ... ..	5
Cabane, pylon, and warping gear ... ..	2
Tail, vertical rudder, and empennages with wiring ... ..	5
Head and shoulders of pilot ... ..	5
Hub of propeller ... ..	2
Cylinders, etc., of motor, assumed exposed ... ..	4
Radiator and piping ... ..	5

So when  $V_1 = 60$  f.p.s.,  $r_1 = 60$  lbs.

Whence, generally  $r = .017 V^2$  ... (a)

Secondly, substituting for  $W$  in equation (7) we get:—

$$1000 = K_1 V^2 A \tan \alpha \dots\dots\dots(b)$$

and substituting for  $H$  in equation (6), and assuming

$$S = .33 \text{ (which assumption we must verify later), we get:—}$$

$$16500 = V^3 (K_2 A \tan^2 \alpha + .017) \dots\dots\dots(c)$$

Now suppose that, from the before-mentioned data for planes, we find that for a plane of the shape we intend to use, and between the limits of 6 deg. and 9 deg. for  $\alpha$ ,

$$K_1 = .0070 \text{ and } K_2 = .0065$$

And suppose we choose for the area of the supporting plane  $A = 200$  sq. ft.

$$\text{Then from (b) we get:— } V^2 = \frac{715}{\tan \alpha} \dots\dots\dots(d)$$

$$\text{And from (c) we get:— } V^3 = \frac{16500}{1.33 \tan^2 \alpha + .017} \dots\dots\dots(e)$$

Probably the simplest method of solving for  $V$  and  $\tan \alpha$  is by trial and error of values for  $\tan \alpha$ :—

So trying  $\tan \alpha = .10$

From (d) we get  $V = 85$  f.p.s.

trying  $\tan \alpha = .11$  " (e) "  $V = 82$  f.p.s.

From (d) we get  $V = 81$  f.p.s.

trying  $\tan \alpha = .12$  " (e) "  $V = 80$  f.p.s.

From (d) we get  $V = 77$  f.p.s.

trying  $\tan \alpha = .12$  " (e) "  $V = 77$  f.p.s.

So we find that, provided our assumed value for  $S$  be feasible:—

Flight velocity  $V = 77$  f.p.s. = 51 m.p.h.

Angle of incidence  $\alpha = \tan^{-1} .12$ , or very nearly 7 deg.

Finally, then, to check the assumed slip ratio  $S$ , we have a



$$T = \frac{H}{(1+S)V} = 214 \text{ lbs.}$$

and pitch speed  $v = 1.33V = 102 \text{ f.p.s.}$

$$\text{whence pitch } p = \frac{102 \times 60}{1200} = 5.1 \text{ ft.}$$

Now air pressure @ 102 f.p.s. = 14.5 lbs. per sq. ft.

" " 77 f.p.s. = 8.3 " "

$$\text{Difference} = 6.2 \text{ lbs. per sq. ft.}$$

So we can take that :—6 disc area  $\times 6.2 = T$

$$\text{or } \frac{214}{.6 \times 64} = 57.5 = \text{the necessary sq. ft. of disc area of}$$

the propeller, i.e., propeller must be 8.6 ft. dia. and 5.1 ft. pitch.

For a two-bladed tractor of average type, and of this pitch ratio  $\left(\frac{5.1}{8.6}\right)$ , this value for the "equivalent disc area" (i.e.,

.6 of the actual disc area) is approximately correct. So we may legitimately use the 33 per cent. slip assumed, and hence also the other results obtained.

It should be noted that at this speed  $V = 77 \text{ f.p.s.}$ ,

$$r = .017 \times 77^2 = 100 \text{ lbs}$$

$$\text{whence } d = 214 - 100 = 114 \text{ lbs.}$$

Westbury-on-Trym.

FRANK S. BARNWELL.

[Mr. Barnwell has shown an excellent method of arriving at speed, and his exposition is clear and succinct. There are, however, various points in his letter which are open to question.

As noted elsewhere in this issue, the formula  $V = \frac{CL}{A}$  is in

fact incorrect, the true one being  $V = \sqrt{\frac{CL}{A}}$ . But Mr. Barnwell's contention "one ought to be able to calculate, with a great degree of accuracy, the speed of an aeroplane," is, I am afraid, far removed from actual fact.

The following are some of the points which prevent exact calculation:—

First, if the centre of gravity of the machine is situated in the slightest degree away from its calculated position, the centre of pressure also will not be as calculated; therefore, the angle of incidence will be different, and also the speed. As a matter of fact, a builder is lucky if the centre of gravity is within six inches of its calculated position.

Second, in working out the fractional losses we are liable to errors; for example, we cannot reckon on the exact head-resistance of struts, since they are never really true streamlines. Tie-wires are of immensely variable resistance, as they are tighter or looser. Fabric varies its resistance as it slackens and tightens with age or weather, and with the various "dopes" used, and a host of other such matters.

In my article, I simply took the "thrust-horse-power" as half the total, leaving the rest to cover propeller and head resistance losses, having averaged this figure by simple calculations from many successful machines. Incidentally, the allowance covers a surplus for rising from the ground, etc.

I therefore maintain my attitude that my calculations (disagreeably simple, no doubt, to the mind of a master of higher mathematics) are amply accurate for practical purposes; though I willingly admit the superior interest of Mr. Barnwell's research.—F. K. TURNER.]

#### The Aerial Post Once More.

Sir,—Somebody referring to the fact that letters by the aerial post took nine days to travel so miles, suggests that this item of intelligence will be valuable in the future as showing the difficulties of flight in these days; in which case it would seem that if they had taken a month over the journey it would have been a better proof, while the very best proof would have been given if they had never made the journey at all.

Maida Vale.

W. LE MARTIE.

[And when the Balance Sheet appears, presumably it will prove the organising capabilities of the promoters. Meanwhile it is awaited with interest.—Ed.]

#### Valedictory.

Sir,—I much regret that Mr. Warde-Fox has decided to close our correspondence, which I was finding most interesting.

I willingly leave him with the honours of war, as it appears from his last letter that we are to a large extent in agreement on principles, but differing in terms.

I hope to embody the points learnt in my little brochure (shortly to be written) entitled "On the Application of Tractive Forces to Ambulatory Members."

VENTRE-A-TERRÉ.

#### Models at the Horticultural Hall.

Sir,—It was with the greatest surprise that I read "P.K.T.'s" remarks in THE AEROPLANE of October 19th to the effect that I differ from Mr. Grimmer in respect to length of fuselages. There also seemed to be a suggestion that our new racer has an extra long fuselage.

It may possibly interest "P.K.T." to learn that the new type machine has the same length of fuselage as the standard type, viz., 33 ins., the span being in each case 20 ins. Does "P.K.T." wish to imply that 33 ins. is too long for a 20-in. span? If so, it is equivalent to an assertion that all present-day models are disproportionate freaks.

"P.K.T.'s" own experiences should have taught him that it is essential to have—in view of present competition rules—a fuselage slightly longer in a model than in its full-size prototype. It does not follow that the "Mann" full-sized monoplane will have an exactly similar ratio of span and fuselage length, for the simple reason that its motive power will not be rubber! "P.K.T." may be glad to hear that in this, as in all other matters, Mr. Grimmer and myself are in entire agreement.

Surbiton.

"MASTER MANN."

#### "The Revolving Model."

Sir,—I notice in the current issue of THE AEROPLANE a letter signed by Mr. Vessey. I feel it my duty to apologise for using the word "similar" in my description of one of our meetings at Bristol when comparing his machine to Givaudan's. Knowing how valuable space in your paper is, I made my description as short as possible, and could not go into the various points of the individual machines at all carefully. I should really have said that the "Vessey" flyer depends for its lateral stability on the same principle as Givaudan's machine—viz., constant lifting capacity, however much it is tilted up sideways. Of course, the constructional details are quite different, and two screws are employed instead of one. With regard to the rotating effect, I maintain that my remarks were quite a fair criticism of the model as I saw it. The turning may have been due to the speed of the screws being slightly different; but if the model is never intended to turn completely round, may I be allowed to suggest that if half drums were substituted for whole drums a very good righting effect would be produced and lateral tilting would be prevented rather than neutralised? May I say also that one feature of "Vessey" models, at any rate, allows of no criticism, and that is their construction and finish.

RYDER V. TIVEY.

#### A Correction.

Owing to a printer's error, the first velocity formula in Mr. P. K. Turner's article last week appeared as  $V = \frac{CL}{A}$

This should read:— $V = \sqrt{\frac{CL}{A}}$

Our thanks are due to the many correspondents who have pointed out the error.

#### Flying without Engines.

By an error, a paragraph in the *Evening News* recently, dealing with the new "Flying Without Engines," said that "mechanics who merely climbed up behind an engine and set it going will be displaced by men of a somewhat higher type," was ascribed to Mr. Harold E. Perrin, secretary of the Royal Aero Club.

Mr. Perrin did not make the statement; it was the addition of the *Evening News* correspondent, and was incorporated in the interview by a printer's error.

The writer of the article, it may be added, used the word "mechanics" in its literal or professional sense.

#### W.H.C. Propellers in Holland.

Foreign readers of THE AEROPLANE will be interested to note that M. Monnier Harper, 98, Kanaalweg, Scheveningen, Holland, pilot and constructor of the Monnier Harper monoplane, has taken the sole agency for Holland for the W.H.C. propellers, machines, and other goods, made and sold by Weston, Hurlin and Co.



### Over the Mountains of the Crimea.

A telegram from Yalta announces that Lieut. Gelhar, of the Russian aerial fleet, on a 50 h.p. Blériot, flew from Sebastopol to Soudak over the mountains of the Crimea, beating at the same time the Russian altitude record. The official altitude, recorded by barograph, was 9,800 ft. He landed in the grounds of the Château Livadia, the property of the Czar of Russia. Lieut. Gelhar expressed his extreme satisfaction with his machine, which was of the same type as that which Le Lasseur de Ranzay flew over the Apennines a week or so ago.

### Mr. Hammerstein's Venture.

Though this has nothing to do with aviation, aviators are, as a rule, of a somewhat artistic turn of mind, and will, therefore, be interested in the new Hammerstein Opera House when it is opened on November 13th. The writer has recently had the pleasure of inspecting the new building, and can vouch for its being the most beautiful theatre in London at the present time. It has been excellently constructed on the most modern fireproof lines, and an uninterrupted view of the stage is possible from every part of the house. Owing to the carefully designed "stream-line" form of the interior of the building, its acoustic properties should be excellent, and the distinguished artists engaged by Mr. Hammerstein will certainly have the opportunity of displaying their powers under the best possible circumstances.

It is true that to anyone interested in first-class music, more especially of the modern school, some of the operas down for production do not offer the attraction of novelty, including, as they do, such works as "William Tell," "Il Trovatore," "Les Huguenots," and others of similar antiquity and respectability. On the other hand, the opera which is to open the theatre, "Quo Vadis," is certainly not familiar in this country, and should ensure a full house on the first night, after which the promised excellence of the principals, chorus, and orchestra, together with the gorgeous staging, will, no doubt, advertise the theatre sufficiently to ensure a large audience, composed of those who still prefer the old operatic favourites, but who will like to see them somewhat more gorgeously produced.

It is to be hoped that when once Mr. Hammerstein has succeeded in accustoming the British public to patronise his new opera house, he will then have the courage to cut loose from the old wearisome routine of Covent Garden opera, and give us some of the less known, but immensely superior, work by later German, Slavonic, and even British composers.

### THE VISITORS' LIST.

MR. T. SOPWITH, who had only arrived from America the previous day gave a most interesting account of his experiences. Evidently aviation is making great strides in the States, but it is being done on American lines, which certainly would not work in this country. The Wright Bros. have adopted a most extraordinary method of disposing of their machines, and seem to have established, if not an actual acknowledgment of their patents, at any rate, a very healthy fear of the consequences of infringing them. Mr. Sopwith says that anybody who wants to fly a Wright machine has to pay £1,000 for it to begin with, and thereafter has to pay a royalty of \$100 every time the machine is taken out for competition, or with prospects of profit, i.e., for passenger flights, etc. Consequently, if there happens to be a £25 prize up for a small competition such as for a starting competition, and so forth, and there are six competitors, the one who wins gets £5 after paying the Wrights their appearance fee, and the rest lose £20 each, while the Wright Bros. make £120. It looks fairly good business for the Wright Bros. However, the Wright machines have got such a name in the States that aviators are apparently quite willing to handle them even on such terms, though their willingness is somewhat aided by the fact that if they dare to fly anything else except a Wright a law action is promptly taken against them. Those who can afford to defend merely enter a defence, and are apparently left alone, but the poor ones are compelled to knuckle under.

Nevertheless, there are thousands of people, who are not professional aviators, building machines purely for their own amusement in the States, and to that extent there is more activity in the aeroplane there than on this side. Mr. Sopwith says that a great deal of harm has been done by individuals putting together a machine which is only capable of doing hops, fitting an insufficient engine into it, and taking these for alleged exhibitions into little country places, with the result that unless a man has made a name as an aviator at one of the big meetings smaller towns are apt to fight shy

of engaging him. The same thing has been done in this country to some extent, but owing to the apathy of the people in most parts of the country there has been very little exhibition flying during the year, so that such swindlers' profits must be very small.

As regards his future movements, Mr. Sopwith, who is looking extremely fit and well after all his hard work, has not yet decided whether he is going back to the States after a short holiday, or whether he is going to stay over here and develop certain ideas which he has for the construction and flying of machines.

CAPT. BERTRAM DICKSON, who is evidently steadily getting stronger and stronger, called on his way over to Reims from Bristol. He had already paid one visit to the French military trials, and had acquired a large amount of valuable information, which he naturally keeps for the benefit of his own firm. He was, however, most emphatic on the advantages of all-steel construction, and the abolition of all wires and strainers. He seemed particularly to admire for its construction the Astra triplane, which, although an ugly machine in the air, is quite a practical flying machine, and is very well suited for weight carrying. Captain Dickson himself was one of the first and strongest advocates of all-steel construction, and its adoption by such firms as the Voisin and Astra, not to mention the R.E.P., is strong evidence of the soundness of his judgment.

MR. BRYDEN BROWN, the well-known engineer of the firm of Brown and Helleon, of Sydney, N.S.W., and late of Kynochs, of Birmingham, came in for general information on the subject of aviation. He, like Mr. Watt and Mr. Busted, is convinced that there is a great future for aviation in Australia, owing to the immense flat plains over which flying is possible. Mr. Brown believes that some of the well-to-do young squatters would quite cheerfully buy aeroplanes, on which to tour their estates, if they could be bought for a price commensurate with the work in them, and he is spending some of his time while in this country in studying aeroplanes with a view to doing business with them as soon as an appreciation of aviation takes hold of Australia. He is also inclined to the belief that there will some day be quite a big business in hydro-aeroplanes for use over the big waterways such as Sydney Harbour.

MR. GORDON ENGLAND, also on his way to Reims, having managed to tear himself away from the construction of his new biplane, was most interesting on the subject of the fore and aft stability of machines of the O-P-2-1 type, and denied emphatically that there was an inherent reason why machines of this sort should have any particular tendency to dive suddenly, as some of the detractors of the type allege them to do. He believes that if the centre of thrust and centre of head resistance are made properly coincident it is possible to avoid altogether any such tendency. He expects to have his machine out experimenting in the course of a week or two, and its first appearance will be awaited with more than usual interest, for Mr. England is not only himself a pilot of the very first class, but he is one of the few pilots who have a very thorough knowledge of why an aeroplane flies, and what takes place while it is flying.

M. NORBERT CHEREAU, fresh from his trip on the new two-seater Blériot, expressed his great satisfaction with the machine. He was the first passenger who had been up with Mr. Hamel on this machine, and while they were up they had a race with the Salmet to the 50 h.p. racer. As a result they found that the 70 h.p. two-seater, with two people on the side by side on it, was considerably faster than the 50 h.p. single-seater. Also, it climbs faster, and leaves the ground very much quicker. M. Chereau, who, like almost all Frenchmen, has naturally an eye for artistic effect, seemed quite as much impressed by the beauty of London lighted up for the night, when seen from a height of a couple of thousand feet as he was with the speed and climbing capacity of the machine, and it is certain that when the first novelty of flying has worn off, the scenic effects to be viewed from an aeroplane on a fine day will induce quite a number of people to become regular flyers as passengers, although they cannot, for one reason or another, go in for flying themselves, and there is no doubt that passenger-carrying in general is likely to be a growing source of income to aviators.

MR. HOWARD FLANDERS, looking much better after a short holiday, the first in five years, came with new wings were being built for his monoplane, came to discuss the developments of his business. At the time of his call the machine had not made its attempt on the Michelin Long-Distance Cup, but it was almost ready to do so, and, all being well, he and his assistants were confident of its putting

up a good performance. There is every prospect of the Flanders business showing considerable expansion before long, for arrangements are being made to import fresh capital into the firm, and, with adequate backing, there is no doubt that Mr. Flanders can turn out a machine quite the equal of anything made elsewhere. The writer has had the privilege of learning some of his ideas for the design of future machines, and has no hesitation in saying that if they are carried out we are likely to see something rather startling in the way of all-British passenger-carrying machines before very long.

MR. GUY LIVINGSTON called to say good-bye prior to his departure for South Africa from Southampton by the s.s. *Galway Castle* on the 28th. Mr. Livingston, in conjunction with Mr. Compton Paterson and Mr. Driver, has formed the African Aviation Syndicate, Ltd., and is now on his way to make arrangements in South Africa prior to the arrival of his partners, who sail with their machines on the *Garth Castle* on November 11th. Mr. Compton Paterson is taking out his new biplane, marvellously little damaged by its accident at the Welsh Harp, and Mr. Driver is taking the Blériot flown by "Beaumont" (Lieut. de Conneau) at Védérines' Benefit at Hendon. The firm have secured the Blériot agency for all British Africa, excepting Egypt, and when once they have given a few demonstrations at the big military centres they should have little difficulty in selling a fair number to Service men out there, for if the British Government is not keen to support military aviation in the Colonies, it is pretty certain that the men on the spot will not let themselves be left behind while their brother officers at home are being trained in quantities, and, quite possibly, at the expense of the nation. Apart from that there should be plenty of school work to be done among the Army men when they see a couple of really fast machines at work, and there are certainly fair prospects of making exhibition flights and passenger-carrying paying propositions. Friends who wish to communicate with Mr. Livingston should write him c/o the Standard Bank of South Africa, Cape Town, and all letters will be forwarded promptly.

MR. ERIC CLIFT, on maps intent, asked THE AEROPLANE to state, as supplementary to its remarks last week, that any aviator sending in notes of use to the forthcoming series of Clift Maps will be presented with a copy of the particular section containing the course about which he has sent information.

## CLUB NOTES.

### Manchester Model Aero Club.

Club making steady progress, more members are joining each week. Saturday there was larger gathering than usual. Mr. Williamson's six flights averaged 785 feet for Aggregate Competition, in which he took the lead. He was qualified for his 3rd Class Certificate, best flight 648 feet. The "Redivells" started edge on in the customary manner and every time righted itself without hesitation. The Committee want to arrange for lectures and debates during winter season, and would like to have names of members willing to give papers. Local Y.M.C.A. are having lecture by Miss Gertrude Bacon on "Flying Machines," illustrated by Kinetograph, on Wednesday, November 8th. Special concession for admission to lecture will be made to club; tickets sold at flying meeting next Saturday at Trafford Aerodrome, or on application to Secretary, Brownfield Mills, 102, Great Ancoats Street.

### Birmingham Aero Club.

At General Meeting Mr. E. Trykle, of 9, Belgrave Road, appointed to collect subscriptions, and Mr. G. Haddon Wood as Press Steward. During month club lively at Billesley Farm, KINGS HEATH. Large shed recently erected, also sign put up facing road. Shed pleasant addition to ground and large enough for construction of gliders. Splendid towed flights obtained with Mr. R. Platt's glider. During week-end it was turned into biplane, and with fairly strong wind blowing, it was got up to a height of 33 feet, this being the full length of the ropes. Mr. Platt is now well under way with construction of power-driven monoplane, which he hopes to complete by Christmas.

Champion-ship of Midlands flown on Oct. 7. Mr. E. Trykle won senior championship with 80 15th sec. Master Parns won junior championship with 35 sec. Master Stampes; second with 32 sec., had hard luck as previously he had obtained a flight of 70 sec. duration.

While giving an exhibition at Tanworth Mr. E. Trykle obtained a flight of 97 sec. duration. Mr. Trykle is willing to give full particulars of his model to any member of the club and will give them every help.—G. Haddon Wood.

### St. Mary's Model Aero Club.

Club held successful meeting at Drill Field, Hilsae, on 28th. Some excellent flying witnessed, all machines members' own design and construction. Meeting next Saturday, and every Sunday until further notice; assemble at Vicarage at 2.30 p.m. Next ordinary meeting on Wednesday, November 8th, at 8.30 a.m. Will members make point of attending as this is important business to be transacted?—H. Wray.

### Ardeer Aero Club.

Last meeting on Saturday, 28th ult. Various subjects discussed and competitions arranged. The following office bearers elected:—President

W. Anderson; Vice-President, S. Gray; Secretary and Treasurer, A. Sefton; Committee, Conner, E. Crombie, J. Gedde.

Competition was arranged for distance and duration flights on Saturday, 4th November, various prizes being offered for competition. THE AEROPLANE is eagerly looked for each week by the members of the club. Accessory catalogues will be welcome.—A. SEFTON, Hon. Sec. and Treasurer.

### Paddington Aero Club.

At meeting held October 25th above club was reformed. In future to be run in conjunction with Fawkham Aerodrome, where private flying ground. Sunday and use of glider will be at members' disposal. Handy workshop off Harrow Road, Paddington, also provided. Subscription fixed at 1/- per month, model set sum for advantages obtained. Competitions will be arranged for model aeroplanes, and kite flying will also be a feature. Goodly number of members enrolled, and anyone interested is asked to write to Hon. Secretary, H. HUNTER, 2, Ebbrooke Road, Paddington, W. who will be pleased to give further information.

### Blackheath Aero Club.

Good number of members competed for prize offered by Mr. Rippon. Sen. Distance event won by Clark's "A.B.C." No. 46, which flew 914 feet; L. Brown second with 556 feet.

At second meeting L. Brown won "point-to-point" race, Rippon, Junr., was second. Competitors had to fly machines across Lee Aerodrome and through goal posts, entering from left. Least number of flights to be the winner. Weekly meetings at Kidbrooke and Lee as usual. Further particulars from Hon. Secretary, at 5, Limesford Road, Nunhead, S.E.

### Yorkshire Aero Club (Model Section).

Competition for Thornton medal will be held on Saturday, 4th November, at Carlton Hill Aerodrome, at 3.30 prompt. Entrance fee 2/- per model. No restrictions as to size, weight, etc. A free invitation to all. TOM, WALKER, Hon. Sec., 5a, Hurland Street, Hunslet, Leeds.

### Bristol Model Flying.

Model meeting on the Downs (Sea Walls) at 3.30 p.m. on Saturday next (November 4th). It is hoped that as many as can will come as, although the elements are generally against us, the flying is always interesting and varied. R. V. TIVY.

### Liverpool Model Aero Club.

On the 28th, 13 models at ground. Ledward gained certificate with twin screw monoplane, completing tests with p. ety crew. S. Malins and A. G. Pugh both did flights of over 400 feet with twin screw models. Latter called by members "Pugh's cathedral" on account of size of plane. Harry, Huntingdon and J. Malins all flying well, and to make them go further I have pleasure in offering 12 inch carved propeller to first member to reach 1,000 feet in straight line by November 30th. Will all those interested kindly communicate with the Club, or be on the ground any fine Saturday. Subscription is only 6d. per month. Flying next Saturday at 5 o'clock. ALEX. GRIMMOND PUGH, Hon. Sec., 39, Brook Road, Bootle.

## The Aeroplane, 166, Piccadilly, W.

Telegraphic Address: AERLON, London.

Telephone: Mayfair 6407

## SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
3 months, post free	1	4	3 months, post free	2	9		
6 " " " "	3	6	6 " " " "	5	6		
12 " " " "	6	6	12 " " " "	11	0		

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.

There is no propeller beats the AEROSPEED. We are the makers. Then send to

**E. MELCOMBE, HARPENDEN,**  
FOR ALL ACCESSORIES.

Large stock of wood, free from defects, knots, &c.  
Hickory & Silver Spruce, up to 1 in., 24 ft., 1/0  
American Ash, Poplar, and Birch, 48 ft., 1/0

Stamp for Catalogue.

### ELASTIC.

1/2 in. strip, 1 1/2d. per yd. or 1 1/2d. per dozen yards.  
3/4 in. strip (about), 1d. per yd. 10d. per dozen yards.  
1 in. strip, 1 1/2d. " " " " " "  
1 1/4 in. strip, 1 1/2d. " " " " " "  
1 1/2 in. strip, 2 1/4d. per yd. 1 1/2d. " " " "

**PARCELS MADE UP FROM 2/6 to £1 1s. 0d.**



## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words 1/6; Situations Wanted ONLY—18 words 1/-, 1d. per word after.

### PATENTS.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS.

THE AEROPLANE will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to THE AEROPLANE, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

### MACHINES.

FOR SALE, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 514, Conduit Street, W.

**£400** SPECIAL OFFER of twelve AVRO Biplanes complete with 35 h.p. Green engine. Usual price £600. Offer withdrawn November 30th. Write at once for particulars.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**NO REASONABLE OFFER REFUSED.** New 3-seater "Valkyrie" monoplane; 30 h.p. engine; Spiral Tube radiators; Claudel-Hobson carburettor; beautifully built and finished; been through trial flights; FOR SALE as a bargain owing to death of owner.—Box 401, THE AEROPLANE, 166, Piccadilly

**AVIATORS, ATTENTION!** Now is the time for experimenting, save your money and send for our list of genuine bargains. Blériot monoplane £30; Green engine £75; Biplane £20, built by Short Bros. Big selection of propellers, £3 each. Fittings, sockets, wheels, strainers, tanks, wings, wire, all at half cost price. WESTON HURLIN Co. (PF Building), 13, Milford Lane, Strand.

**MONOPLANE**, thoroughly tested, complete, 40 h.p. Engine, spares, etc., cost £800, owner going abroad, sacrifice £90 quick sale. GRATZ, LIMITED, 44.46, Whitfield Street, London, W.

### ENGINES.

**50-60** H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—THE AEROPLANE.

**WANTED**, 70 h.p. Gnome, in good condition, exchange brand new 50 h.p. Gnome and cash.—Box 400, THE AEROPLANE, 166, Piccadilly.

### PROPELLERS.

**PROPELLERS.**—"Avro" Propellers of proven efficiency 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co. Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best, Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### TUITION.

**TUITION**, with or without limited liability, Blériot XI; personal instruction.—CHANTER, Aerodrome, Hendon.

**£50.** TUITION in flying till certificate is won. Avro pupils won Manville, Brooklands aggregate, 1st, 2nd, 3rd; Brooklands, October 4th, 1st and 2nd, The AVRO School for most thorough and all-round instruction. A. V. ROE AND Co., Brownsfield Mills, Manchester.

### TUITION—Continued.

**L**ANARK AERODROME, N.B. Tuition for R.Ae.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

**H**ERBERT SPENCER FLYING SCHOOL, Brooklands Aerodrome, Weybridge. Practical Aeroplaning—Ballooning and Parachuting—constructional work Fee from £50—Special terms to Naval and Military officers.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

**D**EPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD. 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

### MISCELLANEOUS.

**H**ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

### FLYING MODELS.

**Y**OUR OPPORTUNITY, seize this chance now to acquire the W.H.C. rise off ground prize-winning monoplane. Usually sold at 15/- 5/-  
A/s offered W.H.C. quarter mile winner, 4/6 and "W.H.C." Monoplane flyer. All post free in England. 3/-  
Best selected wood for models 4ft, 1d., geared winders on foot rest 2/6, round cane 4ft. 1d., propellers cheapest in world. Send ½d. stamp for list, or better give us a call WESTON HURLIN Co. (PF Building), 13, Milford Lane, Strand.

**"MANN" MONOPLANE.**—Owing to the enormous demand for this machine, we are unable, for the present, to accept any further orders. What we can still supply by return of post are parts for constructing a "Mann" Monoplane 5/6, "Mann" propellers 3/6 per pair, "Mann" geared winders 5/6, "Willis" ¼ inch strip rubber 1/6 per dozen yards, and "Willis" lubricant 9d. per bottle. From all large toy shops and stores, or post free in the UNITED KINGDOM only from the sole manufacturers, WILLIS BROS., 14, Wellington Square, Hastings.

**EVERYBODY WANTS REQUISITES. (1d.)** "How to build a prize winner monoplane" 2d. post free. Prize winning monoplanes complete, 3/6. Send 2/6 for our "little gem" monoplane, guaranteed flyer, best workmanship. Geared winders 1/-, Aluminium tube 2d. 10c, Silk 1/6, yard, Cupped washers 3d. dozen, all wood 1d. for 3it., everything cheapest in London. Send for list. REQUISITES, 47, Bedford Street, Strand.

**"M.S.C." MONOPLANE.**—A genuine ¼-mile flyer complete with geared winder, post free 8s. 6d.—MURRAY STANGER Co., 20, Bridge Road, Tottenham, N.

**M**ODEL PROPELLERS—Genuine CHAUVIERE—8in., 10in. and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.

**A**LLEWEATHER single propeller Monoplane, guaranteed flight 1,000 ft., price 10/6 post free. THOROGOOD Co., Icknield Way, Letchworth, Herts



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, NOVEMBER 2nd, 1911

No. 22

THE NEW

## "BRISTOL" Monoplane

is Remarkable for its

**SPEED, STRENGTH & STABILITY**

It possesses the well-known qualities of all the

**"BRISTOL" AEROPLANES,**

its construction embodying the

**Finest Materials, Workmanship and Finish**

---

### PRICES:

**Military Type (Two-seater) £950 Racing Type (Single-seater) £900**

With 50 h.p. "GNOME" Engine.

With 50 h.p. "GNOME" Engine.

**Popular Type (Single-seater) £500**

With 28/37 h.p. Engine.

---

FOR FULL PARTICULARS APPLY TO—

**The British & Colonial Aeroplane Co., Ltd.,  
FILTON, BRISTOL.**

"THE AEROPLANE," November 9, 1911.

# THE AEROPLANE

12  
WEEKLY

Edited by CHAS. G. GREY. ("Aero-Amateur")

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.

THURSDAY, NOVEMBER 9th, 1911.

No. 23

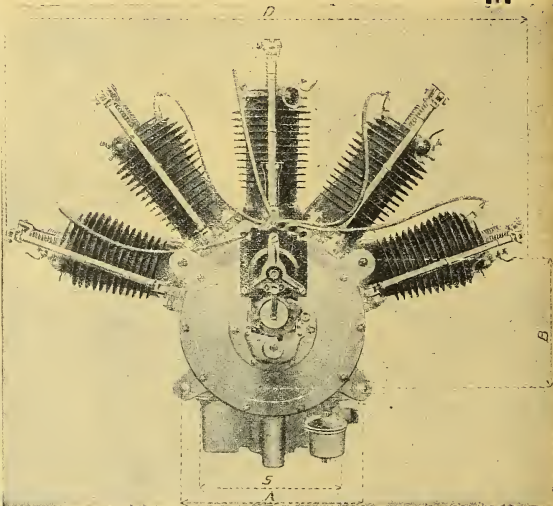
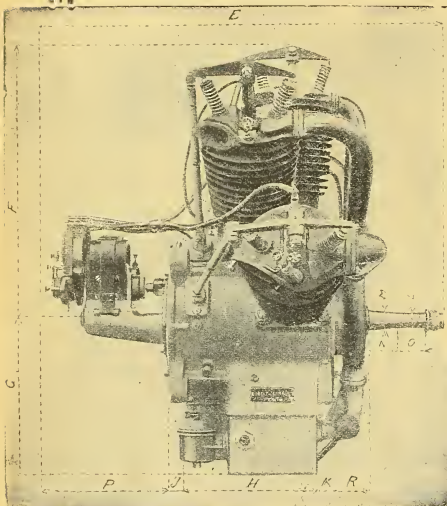
## THE MISSIONARY.



Mr. B. C. Hucks, who, with his Blackburn monoplane, has done so much useful missionary work in spreading an appreciation of aviation in the West Country, flying on 28 days out of 30 advertised.

SMITHSONIAN  
INSTITUTION OCT 27 1911

# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40/50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

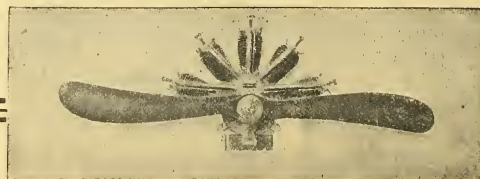
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
THE BETRAYAL OF BRITISH INDUSTRY ...	531
A PERSONAL EXPLANATION...	532
THE FRENCH MILITARY TRIALS ...	534
AIR CURRENTS ...	536
QUESTIONS FOR PILOTS: THE WINNING PAPER ...	538

	PAGE
MORE QUESTIONS ...	539
THE WEEK'S WORK...	540
THE WRIGHTS' GLIDING EXPERIMENTS ...	544
CORRESPONDENCE ...	547
THE VISITORS' LIST...	548

## The Betrayal of British Industry.

Following on Colonel Seely's announcement in the House of Commons, on Monday of last week, that a number of officer-aviators would be put into training immediately so as to increase the number of air scouts available in case of war, one is naturally moved to ask how they are to be mounted on Government machines when they are trained.

Colonel Seely admitted that we have an inadequate supply of machines for Army aviators, and that we have hung back because the War Office wanted to be sure before buying a great number that they were buying the most useful type. He added that arrangements for a competition were now practically completed, and he hoped before the end of the year to announce the prizes the Government would offer. Interest, therefore, centres for the moment on the form that competition is to take.

The general assumption is that a competition is to be arranged something on the lines of that which has now been completed in France, subject, perhaps, to certain of the tests being different. In any case it is assumed that the competition will be for all-British machines, and that the makers of the winning machines will be assured of orders to a considerable amount.

Knowing that in case of war this country must depend on itself and itself alone for its supply of aeroplanes, such an assumption is merely based on ordinary common sense, but THE AEROPLANE is able to assert without fear of contradiction that until this week the Government has had entirely different plans.

It appears that the arrangements "now practically completed," referred to by Colonel Seely, do not, on the one hand, include any scheme for an all-British competition, nor do they include prizes in the shape of orders. In the first place the competition is to be open to all the world, and in the second place the prizes are to be prizes in cash and nothing else; no orders are to go with them.

On the face of it, such an arrangement must appear little short of imbecility. As the writer has pointed out again and again, if this country is to have an adequate aerial force it is absolutely necessary that the means for producing the equipment of such a force must be, and can only be, existent in this country. And, in order that such equipment shall be available when needed, the manufacturers of such equipment must be supported *now*, so that they may be capable of producing in adequate quantities when the occasion arises.

The War Office cannot properly contend that it is

necessary to include French manufacturers in order to get the best machine, never mind where constructed. Their own officers of the Air Battalion are in Reims to-day and will report first-hand on the latest thing in French military machines. Moreover, it is common knowledge that the War Office have bought the latest of the French machines which are still awaiting trial. One must, therefore, look further for the reasons influencing this strange idea of throwing the competition open to the world, and giving a prize only.

It is fairly generally known that the erstwhile Army Balloon Factory, now called by the grandiloquent title of the "Army Aircraft Factory," has been from its very inception an abject failure. The dirigibles turned out by it, under the supervision of a highly paid staff of supposedly expert civilian officials, have been either successful toys, or, as in the case of their last effort, useless.

Their aeroplanes have been, as far as one can gather, two in number. One of them was a biplane of the type commonly known as "tail first." This, owing to its general design, must obviously have appeared to be a death-trap to anybody with a practical knowledge of aviation, and such it proved to be. The other is a biplane with the engine behind, of a type built by one or two French makers, but in reality absolutely out of date. It does not, therefore, require much imagination to see that those responsible for this precious "factory" must strain every nerve and use every means in their power to justify their existence.

Behold the result! We hold a competition. By means of a big prize the leading foreign manufacturers are induced to compete, with the further hope that they will get orders if they make a good showing. One of them wins. The winning machine is bought and taken to Farnborough. These officials at the Balloon Factory, incapable of the slightest attempt at originality on their own part, proceed to copy that machine down to the most minute detail.

It may be noted that we have assumed that the prize will be won by a foreign manufacturer. Unless the proposed conditions are altered, it *will* be won by a foreign manufacturer, for no British constructor, with any sense, would consider for one moment the question of entering for a competition organised on such lines.

In order to compete on an equal footing with the rich, Government-subsidised, foreign manufacturers, the British manufacturer would have to spend more than the value of the prize in his preparations for the

competition—and with what prospects forsooth? Simply that if he should, at great expenditure of brain work, trouble, and money, succeed in winning that prize, he may furnish these people at Farnborough with designs which they themselves are totally incapable of producing. Neither in dirigibles nor in aeroplanes have they shown the slightest originality; and, worse still, they have shown that they cannot even make a decent copy.

Therefore, the advice of THE AEROPLANE to all British manufacturers is, that unless the rules of the competition, when published, carry with them the conditions that, first of all, the competition shall be for all-British machines, and, secondly, that the prizes shall take the form of substantial orders for machines, the whole competition shall be absolutely boycotted by the British aeroplane industry.

Why does Parliament permit the War Department to set such an unpatriotic standard before the whole

world? In the French military competition now proceeding, which will be worth anywhere from £50,000 to £100,000 to the prize winners, Englishmen are rigorously excluded, as indeed are all but Frenchmen.

Again, the Germans are proceeding by secret methods, and into the inner circles none but their own countrymen are permitted to enter. We alone of all nations go out of our way to encourage foreigners and to discourage English manufacturers, for the orders given out in this country by the War Office do not, so far, amount to "a row of pins." We have in this country aeroplane designers and manufacturers as good as, or better than, any in France, yet in spite of this the British industry is being starved, and will be stifled ultimately for want of Government support.

Now, therefore, is the time for Parliament to intervene, and see that the coming competition is British from start to finish.

#### A Personal Explanation.

Lest the attitude of THE AEROPLANE should be misunderstood, I wish here to make a personal explanation of the position as regards the proposed military trials. Foreign machines must be barred from the competition, not from prejudice of any kind, but simply because, for the safety of this country, the British manufacturer must be encouraged, and, if necessary, subsidised, by the Government.

I have the greatest admiration and respect for the constructive genius and tenacity of purpose of M. Louis Blériot, M. Louis Bréguet, M. Deperdussin, M. Esnault-Pelterie, and the late Edouard de Nièport, and various minor constructors, all of whom have done great work in advancing the progress of aviation.

The Blériot, Deperdussin, R.E.P., and Nieuport monoplanes, and the Bréguet biplane are a long way ahead of any machines on the Continent, except those which are exact copies of them, and, if built in England, would be entitled to a share of our military orders, along with those which must be placed for such machines as the Bristol, Vickers, Blackburn, and Flanders monoplanes and Avro and Cody biplanes, which have proved their merits. Orders must also be given for the engine-in-front bipanes now nearly ready for production by the Bristol Company, Valkyrie, and Howard-Wright, which, owing to the experience of their constructors, are bound to be equal to any others as soon as they make their appearance. I, personally, feel inclined to include the Valkyrie monoplane as well, but, knowing the prejudice against the so-called "tail-first" type which exists in both Services, it seems hopeless to advocate its cause. However, the other machines mentioned must be ordered sooner or later, as well as other British machines which are now only in an experimental stage.

British engines, such as the Green, E.N.V., Isaacson, and

N.E.C., must also be encouraged, and if the tests set them are difficult, one may be sure that the makers will rise to the occasion, always provided that they are assured of orders which will compensate them for their expenditure. But we must have all-British machines for the sake of our own safety.

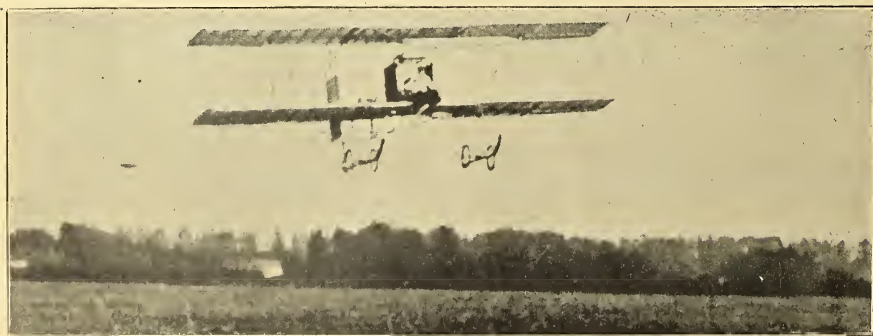
If foreign manufacturers will open works here and make all-British machines to their own designs, well and good. They will then rank with the rest of the British makers, and I feel sure that my very good friends, MM. Norbert Chereau, Maurice Ducrocq, and Lawrence Santoni would be even happier as the managers, respectively, of the all-British manufacturing branches of the Blériot, Nieuport, and Deperdussin firms than merely as selling agents, who, in time of war, would find their occupations gone.

By all means let us use the best foreign designs, if they are any better than our own, and let us pay their originators honestly for them, but, for the purposes of the proposed Army Competition, we must insist that every competing machine must be British throughout.

I look to my colleagues of the British Press to back up this appeal not only to the patriotism of the community, but to their own self-interest.—CHAS. G. GREY.

#### The Question in the House.

Last night (Wednesday) Mr. Joynson Hicks, M.P., put the following question: "To ask the Under Secretary of State for War whether, in arranging the promised competition for aeroplanes and aviation, he will follow the example of other nations and confine the Government prizes to English manufacturers, who alone could be relied upon in time of war; and whether he will give some of the prizes in the form of orders for the manufacture of machines rather than in cash?" Colonel Seely's reply was given too late for publication, so it will be dealt with next week.



THE FIRST AEROPLANE IN NEW ZEALAND.—The all-British Howard-Wright, with E.N.V. engine, starting a flight.

# WINTER AVIATION.

To pay your expenses during the winter months

FLY AT

## **Brighton-Shoreham** **Aerodrome**

**NOVEMBER, DECEMBER, JANUARY and FEBRUARY**

Brighton Season in full swing.

Passengers plentiful at paying prices.

**FREE NOTICE BOARD IN ALL HOTELS  
FOR USE OF TENANTS.**

News circulated by Exchange Telegraph Co., who have an office on the ground.

**Maximum Sunshine. Minimum Fog.**

**STEADY SEA BREEZES. NO GUSTS. NUMEROUS DEAD CALMS.**

Perfect Ground. Low Rents. Living Cheap. Large  
pleasure - loving population. Aviators are popular.  
Expert Engineers, Oils, &c., are available on the spot.  
Large water Surface available for Hydro-Aeroplanes.

APPLY :—MANAGER—

Telephones :—67 Shoreham ; 4642 X Brighton.

**Brighton-Shoreham Aerodrome, Shoreham, Sussex.**



## The French Military Trials.

On the 29th the weather was better than it had been during all the previous trials, and many competitors were out.

Early in the morning Prévost, on the 100 h.p. Deperdussin, passed his third landing test at Montcorret, and was followed by Védérines on the 80-Anzani Deperdussin, who got through his second test in masterly fashion. Brégi, on the Canton-Unné-Bréguet, also passed the second, and Frantz, on the Labor-Savary, the third test. The ground was very soft—in fact, flooded in parts—with the result that various pilots could not get off it. Among those who failed in this way were Moineau, on the 100 h.p. Bréguet, and Brégi, although the latter had passed his previous tests with flying colours. Gougenheim, on the 70 h.p. Farman, successfully made his landing test in the stubble.

In the afternoon Prévost went out for speed, and covered the 40-mile Reims-Mourmelon-Reims course in 16 mins., i.e., 67 m.p.h. On his return he got up for height, but only reached 460 metres in the 15 mins. allowed. He claims, however, that the barograph was wrong. Védérines passed the third landing. Frantz, who on the 27th had failed in landing but passed the "dismounting" test, and who had passed the last landing test on the 28th, returned to Reims by air, the committee allowing this, as he had returned by road on the 27th.

Gaubert, on the Renault-Astra-Wright, went for his first trial, but landed roughly and turned his machine over. No great damage was done, and Gaubert and his passengers were unhurt. Moineau, on the 100 h.p. Bréguet, passed his second height test, reaching 500 metres in 17 mins. Collier, on the Voisin-Canard, started for his first test, but was forced to descend at Pontgivart, and failed in his test. Nearly all the competing firms had their machines out during the day, doing unofficial flights.

There was another change in the Deperdussin stable, Wijnmalen having been replaced by Delacour, who took over the 100 h.p. Clerget machine. The Deperdussin machines made extremely good showing, Prévost and Védérines having passed four tests in the day. Barra again went for height, but broke two wheels on landing.

On the 30th, the weather resumed the extremely unpleasant aspect which it had worn during most of the trials: a sultry day, with a cold strong wind, which stopped all flying, though one or two attempts were made. Moineau, on the 140 h.p. Bréguet, and Brégi, on the 70 h.p. Canton-Unné machine, tried for the third landing, and Prévost for the first height test, but the wind was too strong for them.

Gougenheim, of the Farman stable, retired, not having sufficient time before the close in which to complete his tests. Voison Frères also withdrew.

The 31st, the last day of the eliminating trials, opened with heavy rain, but towards midday this ceased and the conditions became good, although the air was very cold. Frantz, on the Labor-Savary, did his speed flight, covering the 40 miles in 45 mins., a speed of 50 m.p.h. Védérines also flew the course, but the Commission refused to accept the test, on the ground of petrol consumption, so he tried again, this time successfully.

In the afternoon Frantz and Prévost passed both their height tests, Prévost doing the 500 metres first in 12 mins. 14 secs., and then in 9 mins. 2 secs. The latter is the best time yet done in the tests. Védérines, at his first attempt, descended, saying that his machine was not going well; his second try, however, was successful, the time being 11 mins. The Deperdussin, on this showing, is the quickest climber in the trials.

Barra, who had challenged the barograph on his previous height test, nevertheless tried again, passing this time without question. Brégi passed the first test in 14 mins., but failed at the second, taking 16 mins. He also went for speed, covering the course in 37 mins. (65 m.p.h.), Moineau doing the distance in 36 mins. (67 m.p.h.).

Among the numerous unofficial flights was a humorous performance by Latham on the harem-skirted Antoinette, and the arrival of Lieut. Bousquet, on a Henry Farman, from Sissone.

The net result of the trials is that the following will compete, on November 4th, for the final long-distance speed test over the course of 300 kilos (187.5 miles):—

Barra.—M. Farman, 75 h.p. Renault.

Renaux.—M. Farman, 75 h.p. Renault.

Fischer.—H. Farman, 75 h.p. Gnome.

Frantz.—Savary, 80 h.p. Labor.

Moineau.—Bréguet, 100 h.p. Gnome.

Prévost.—Deperdussin, 100 h.p. Gnome.

Védérines.—Deperdussin, 80 h.p. Anzani.

Weymann.—Nieuport, 100 h.p. Gnome.

The two other Bréguets were not passed, but they have covered 700 kms. in the trials already, and will go through the rest of the performance unofficially.

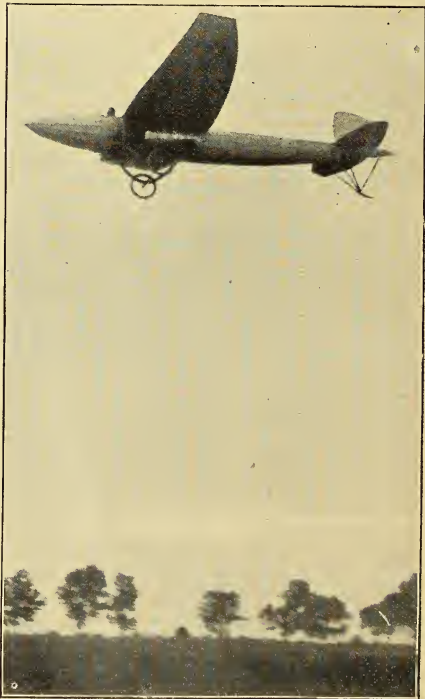
On November 4th the Committee assembled at 8 o'clock, and on account of the fog delayed the start till half-past ten, when, the fog not having cleared off, they held another meeting, calling in the constructors and pilots to discuss the question of starting. The monoplane pilots unanimously voted that the race should be cancelled for the day, but Henry Farman, Renault, Barra, and Fischer insisted on starting, so that the Committee was compelled to consider this one of the three days allowed.

Shortly after, Barra started with two passengers, but was obliged to come down after a few miles. Renault could not get away owing to engine troubles, and Fischer, in spite of his expressed willingness, came to the conclusion that the conditions were too bad.

The reason for the insistence of the biplane pilots appears to be that they believed that in this final test, wherein the machines had to be loaded to their full capacity, the monoplanes would have had insufficient reserve power to combat the weather, while their own machines could have successfully done so. They feel, apparently, that in decent weather the extra speed of the monoplanes would negate their own chances.

At the end of the day the Committee again met, and decided that, in view of the absence of any successful flight, the day's work should be annulled, so that the competitors would still have three days in which to make further efforts.

Up to November 7th no competitors were able to go for the long-distance test owing to the weather.



The Pauthon "Torpedo" in full flight.



# E. N. V.

ALL BRITISH AVIATION MOTORS.  
**MANVILLE PRIZE of**  
**£500**

Brooklands Racing Season  
 Aggregate Prize of  
**£150**

Brooklands Duration Prize,  
 Oct. 4th.  
**£30**

All Won by C. Howard Pixton, Esq.,  
 using a 60 h.p.

## E. N. V.

Address all enquiries to—

The E. N. V. Motor Syndicate, Ltd.,  
 4, Hythe Road, Willesden, London, N.W.

## Special Offer of

**TWELVE** <sup>35-h.p.</sup> **GREEN 'Avro' Biplanes or Monoplanes**



at **£400** each

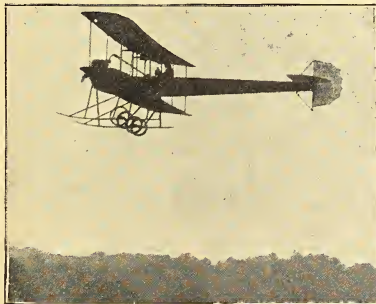


Complete for Passenger carrying.

Regular Price £600.

### THE MACHINE

The "Avro" Biplane is admitted to be Britain's most successful aeroplane. More certificates have been won on the "Avro" than on any other. All :: British machine :: Flies faster with lower horse power than any other machine in the world.



### THE ENGINE

is the premier aero engine of British make. Unapproachable for reliability. The Green Engine was the only British Engine to finish the Circuit of Britain with all parts :: sealed and intact ::

**THIS OFFER HOLDS GOOD TILL**  
 but will be withdrawn immediately twelve are sold

## November 30th

WRITE AT ONCE TO—

**A. V. ROE & CO.,** The Aviators' Storehouse, BROWNSFIELD MILLS, MANCHESTER.  
 Telegrams: "Triplane." Telephone: 698 Central.



## AIR CURRENTS.

## A Reminiscence.

She stood upon a hillock, and her eyes  
Were fixed, her ears were deaf, her lips were dumb;  
Indeed, she heard and yet she could not speak  
Because of that young man's propeller-hum.

I mean the Aviator. He who sat  
With ears ensnathed in flying cap. I ween  
That it was he whom she was gazing at,  
Tho' little of him but his nose was seen.

Behind her stood her swain; with other eyes  
Than hers he looked upon that aeroplane,  
And to himself he muttered, "Once he flies  
I hope the fellow won't come back again."

With deafening buzz the polished engine whirled,  
And out along his starting ground he sped;  
A hundred caps into the air were hurled  
As he rose in the ether overhead.

She clasped her hands, her fair cheeks flushed, her blue,  
Blue eyes in hero-worship tracked his flight.  
Muttered her swain, "If yonder mad-man flew  
Into that muddy pool—'twould serve him right."

But o'er their heads in many an aerial twirl  
The flying man against the evening sky  
Circled triumphant, and that silly girl  
Got her fair neck quite stiff watching him fly.

And he who stood beside her clenched his hands.  
"Why did I bring her out to see that fool?"  
Just then the biplane gave some aero-twists  
And—dived head foremost in the muddy pool.

They dragged them out, his "White Wings" far from white,  
And as he, dripping, on the grass was laid,  
Forth from the crowd there sprang a vision bright—  
(O, foolish swain) "Do let me do 'First Aid'?"

Must we relate the facts? She tied his tongue  
Out with a ribbon; then, as lightning quick,  
She pumped the air back to each breathless lung  
And bound his tibia to a walking stick.

"How brave, how touching," do I hear you say?  
Alas! I have to tell another part.  
She did some thieving as he helpless lay—  
That maiden stole her aviator's heart.

AERO P. LANE.

## AERODROME TYPES.

## No. 5.—The Helper.

Don't we know him? He is so enthusiastic—in the wrong place. So obliging when we don't want to be obliged, so absolutely bubbling over with a mixture of self importance, good nature, and—good advice.

He generally either knows nothing and thinks he is a walking encyclopædia, or he has a good deal of odd knowledge so hopelessly mixed up that his mind is somewhat like a jumble sale on the receiving day.

His regard for personal appearances is absolutely nil, and his face often resembles a successful fly-paper—the result of holding back a machine of the dirty engine type, and a limp tie and limper collar are usual accompaniments.

His suggestions are weird and wild, though made with the best intentions in the world; he is so afraid of everything not being right.

"Seems to me the engine's not running very well," he soliloquises. "Had a look at the carburettor lately? Or p'raps the sparking plugs want a clean up?" You assure him that from the revolution indicator the engine is doing its best, but he sweeps such statements aside. "Ah, beastly things, those—can't depend on 'em a bit," and so on *ad lib.*

A breakage of any kind is a godsend to him. "I can fix that up for you in a twink," says he. "Just give me so-and-so and so-and-so—"

If you are inexperienced you will be probably taken in by his air of confidence and weakly allow him to try and do his worst, but if you have even a slight knowledge of

him and his ways you will call all your powers of diplomacy to your aid and endeavour to stave off the fatal consequences of his ingenious interference.

You may not always be successful; his ways are wily and difficult sometimes to parry, and, besides, he is so really anxious to be useful.

Sometimes he is accompanied by a quadruped, the kind of beast that tried to be dog, got mixed in the process, and ended by being nothing earthly at all. He has no lead to put it on—he is not the sort of person that would have—so a dilapidated handkerchief, well meant like the dog, is called into play, and the latter at once proceeds to seek sudden death by strangulation, other means being denied him.

If you want a particular tool, our friend is quite an adept at bringing you the wrong one, not always from want of knowledge of the difference between a hammer and a chisel, but from over confidence in his powers of being able to give you just the very thing for the job. It is hopeless to try and point out that a bradawl is no use to remove an out-size in screws, and that when you ask for a screwdriver you want a screwdriver, because he will then try personally to demonstrate the superiority of his choice, to the entire ruination of your pet bradawl. The only way is meekly to take, the proffered tool and quietly substitute the desired article when he is not looking.

He departs hot and happy, to return at the earliest opportunity, still bubbling, irrepressible, and with undamped ardour.—D. M. H.

## The New Engine Starter.

(At the aerodrome; one or two machines on the ground.)

MISS TALKLOUD: What are the sails for?

MISS KNOWALOT: To lift the machine up.

MISS T.: And why are they waiting all this time?

MISS K.: For the wind to come and blow the engine round so that it can start.

Stern Guardian of the Ground, to Visitor: "Get off the flying ground."

Visitor: "How can I?"

Guardian: "Get off the ground."

Visitor (humbly): "Please, I'm not an aeroplane."



[Mr. Owen Smith expresses in black and white his impression of the War Office Policy.]

WAIT AND SEE AGAIN:—John Bull: "Here comes a great friend of mine; he will sell you the very thing that England requires in aviation."

War Office: "Sh! no! Let's wait about twelve years before we buy, then aeroplanes will be greatly improved—see the 'business' combined with economy?"



THE



# GRAHAME-WHITE

## FLYING SCHOOL,

The London Aerodrome, Hendon, N.W.

The finest equipped and most accessible Aerodrome in the United Kingdom.

---

---

CONSULT US—DON'T DELAY,

IT IS TO YOUR INTEREST, PROFIT, REPUTATION AS AN AVIATOR,  
TO HAVE BEEN TAUGHT IN THE BEST SCHOOL.

**Commence Now**  
in a New and Profitable Industry offering  
**Unlimited Scope.**

MANUFACTURERS, AMATEUR CONSTRUCTORS,  
EXPERIMENTERS & AVIATORS ARE INVITED  
TO INSPECT OUR GROUNDS AND HANGARS.

We construct to any design and carry out all repairs expeditiously, both to machine and to motor, at lowest possible cost in our new works on the ground, which are fully equipped with the most up-to-date labour-saving wood and metal working machines.

**HANGARS TO LET.**

Full particulars on application to

**THE GRAHAME - WHITE AVIATION CO., LTD.,**

PROPRIETORS OF

**THE LONDON AERODROME, HENDON, N.W.**

'Phone—  
KINGSBURY 22.

Wires—"VOLPLANE," or  
"CLAUDIGRAM, LONDON"

## Questions for Pilots.

Below will be found the winning set of replies to "Questions for Pilots." The winner, who has omitted to sign his name to his paper, vouchsafes the information that he is a mechanic at Hendon, and if he will oblige by sending his name along and establishing his identity with the writer of the paper, the prize of £1 is. will be sent to him by return.

It is peculiarly satisfactory to find a mechanic actually employed on aeroplane work who has such a thorough grip of his subject, for it shows that we have among us the right kind of man for the work. Such a man must be a particularly valuable acquisition to the firm which employs him, and as the demand for capable men increases with the growth of the industry he should rise to a position of considerable importance.

The papers have been marked on a basis of ten marks per question, and, where the winner has not obtained full marks, Mr. W. O. Manning has appended a note explaining the omission which has caused the deduction.

### The Winning Paper.

#### Q. 1.—Why does an aeroplane fly?

AIR.—Air has mass, and consequently may have momentum imparted to it. Lift on an aeroplane is the reaction, or rather the vertical component of the reaction, due to imparting momentum to the air.

PLANE.—The method by which this momentum is imparted is by driving a plane at an oblique angle through the air. The plane thrusts air forwards and downwards. The reaction of thrusting the air downwards is called lift; that of throwing air forwards, drift. The former is balanced by the weight of the machine, the latter by propeller thrust.

RISE.—If the thrust increases the speed increases till the drift again balances the thrust, but since there is no increase in weight to balance the consequent increase in lift the aeroplane rises. Similarly, if the thrust decreases the aeroplane falls.

CAMBER.—For the purpose of reducing deadwater, etc., the "plane" is curved. The curve is a conic section, or combination of conic sections, usually parabolic. [Ten marks.]

#### Q. 2.—Explain the expression "Pitch of a propeller."

The pitch of a propeller at any point is the distance that point would advance during one revolution in a solid medium. The blade path may be compared to a screw or helix, when, of course, the pitch is the distance between the threads. The pitch speed is the speed at which the propeller would advance if working in a solid medium. The slip is the difference between the flying speed (or speed of actual advance) and the pitch speed. [Ten marks.]

Q. 3.—An aeroplane of the Farman type requires the right foot to be pressed against the rudder bar in order to fly in a straight line. Explain what incorrect adjustments may cause this fault, and how you would proceed to correct it.

Since the aeroplane has a tendency to fly to the left, the centre of head resistance must be to the left of the centre of thrust. This may be caused by the following:—

a Distortion of the main planes causing:—

(1) Too great an angle on the left (causing increased resistance on left).

(2) Too small an angle on the right (causing decreased resistance on right).

b Similar distortion of the elevator or tail planes.

c Incorrect adjustment of aileron control wires.

d Combination of any or all of above causes.

Examine machine to find which of above faults exist.

a Probable cause, incorrect tightening up of tension wires. Adjust wire strainers to correct.

b See answer to a.

c One of the left-hand aileron control wires too short.

As the flaps hang down whilst the machine is at rest this is not easily noticeable. Have all the four flaps held out simultaneously and note faults, if any; correct by adjusting wires. [Eight marks.]

[Also the motor may be out of line, so that the propeller does not rotate in a plane at right angles to the direction of motion of the machine. Also if the tail plane is so adjusted as to be too high on the left side (from the back) and too low on the right. This creates a turning movement

which has to be corrected by the rudders as described.—W. O. M.]

Q. 4.—An aeroplane of the Farman type requires the control lever to be pulled over slightly to the left (thereby depressing the right ailerons) in order to prevent it tilting while flying. Give the possible causes of this fault.

Causes and adjustments may be similar to those mentioned in (3). However, as there is no tendency to slew round the deformation must be such that the C. of H.R. and C. of T. coincide.

The main weights may be incorrectly placed, thereby shifting the C.G. to the right of the C.P. This is not a very likely cause, and would be due rather to a fault in design or construction than incorrect adjustment.

The motor torque may be unbalanced, but as the machine has a tendency to rotate in a clockwise direction only a motor rotating in the opposite sense (i.e., counter clockwise) could cause the trouble. [Six marks.]

[Generally in a case of this sort it is found that the two ends of the plane are untrue; one may have too much angle or the other too little. Very often it is due to the extension (if one is fitted) being incorrectly adjusted in this manner. The remedy is, of course, obvious; alter the length of the wires until the plane is true.—W. O. M.]

Q. 5.—In an aeroplane of the Farman type: What is the effect on the flying of the machine of (1) too small an angle of incidence of the tail planes, (2) too large an angle of incidence on the tail planes?

(1) If the tail angle is too small:—

The tail will tend to droop, and the machine is liable to dive backwards, especially when turning corners or if the motor slows up. The elevator will have to be depressed to correct the trouble.

(2) If the tail angle is too large:—

The tail will have a tendency to rise and the machine is liable to dive forwards. To keep the tail down the elevator must be raised.

It is noticeable that whereas the small angle of the tail might improve the stability, the decrease of angle on the elevator would neutralise the effect. Similarly in (2) the unstable attitude of the tail would be corrected by the increase of angle on the elevator. [Ten marks.]

Q. 6.—Why does an aeroplane of the Farman type tend to drop the tail if the motor stops accidentally while flying?

The tail of a Farman type machine tends to drop when the motor stops; for the following reason: The tail is a lifting one working in the slip stream of the propeller, and is therefore to all intents and purposes travelling at a higher speed than the main planes. When the motor stops the slip stream no longer exists, and the lift on the tail is greatly decreased, and, as a consequence, the tail drops. [Ten marks.]

Q. 7.—In a monoplane of the Blériot type, does an accidental stoppage of the motor while flying cause the tail to drop? Give reasons for your answer.

In a Blériot type monoplane the tail does not drop, because it is not working in the slip stream, and is, in consequence, unaffected by motor stoppage. On the contrary, since the main planes are directly in the wake of the tractor they tend to drop and the tail to rise. [Eight marks.]

[Note.—The centre of gravity is also further forward than in the case of a Farman. The tail is certainly in the slip stream.—W. O. M.]

Q. 8.—What circumstances would, in your opinion, justify the trying of a propeller of larger pitch on any machine you may be flying?

(1) If your present propeller is not absorbing the engine power, and there is no room for one of larger diameter, one with a bigger pitch might be used.

(2) If the machine requires a higher flying speed than that for which the propeller you are using is designed, a larger pitch and smaller diameter or geared-down propeller must be used.

(3) This is really a particular case of (2). At high altitudes

or in weather when the density of the air is very low, as during the recent summer, the flight speed is higher, and a larger pitched propeller should be used. The change in mass of the air at different levels is pretty considerable, i.e., about .08 lbs. per cubic foot at sea level and .05 at 30,000 feet. Although the latter height has not been reached on heavier than air machines, nevertheless the difference of weight at 10,000 ft. would make considerable difference. Of course, at the same time, whilst more air by volume must be dealt with, i.e., a higher speed required, the resistance is materially decreased also. [Ten marks.]

**Q. 9.**—Before starting on a flight it is necessary for a pilot to examine his machine in order to make certain that all is in order. Give your procedure for doing this on any machine you are acquainted with.

As the result, of experience with a machine of the Baby Grahame-White type, I should suggest the following method of rapid overhauling:—

**Controls.**—This is the most important part. Examine lever or wheel and work various controls and note action; examine connection between control wire and lever or wheel; examine control wires, taking particular care to note any wear on parts passing through tubes and round pulleys; examine connection between control planes and control wire, also hinges and fittings; note any stiffness in working, also if fabric is secure and in good condition.

**Main planes.**—Examine wires, especially those near propeller, twang like a piano wire to test tautness. Note that wires are liable to break where bent to make a connection. Examine and tighten up, if necessary, all nuts liable to be loosened by engine vibration. Examine fabric for wear or tears. Any bend in the struts or main spars will be obvious.

**Outfitting.**—Examine, as for main plane, framework, also tail planes as main planes.

**Landing skids and wheel spring suspension** should be examined for loose wiring or rubber rotting. Any trouble like bent radius rods, bent wheel, or puncture is too obvious to need looking for.

**Engine bearers**, particularly holding down bolts, etc., should be examined; also note that all nuts on engine are tight, as such fittings as magneto may soon work loose. Examine carefully the petrol and oil tank fittings, as a loose petrol tank is very dangerous. Examine bolts on propeller and propeller itself, and then run engine for a few minutes to ensure good working.

All this may seem to take a long time, but in reality does not take so very long, and if, in addition, the machine is regularly overhauled, should greatly diminish the chance of accidents due to structural defects. Particular care should be taken to examine any parts that have been repaired, especially if recently. [Eight marks.]

[No mention of petrol or oil.—W. O. M.]

**Q. 10.**—Why is it advisable to bank a machine when turning corners?

An aeroplane should be banked when turning a corner for the same reason that a motor-car turns at high speed on a banked track—to prevent skidding due to centrifugal force. If the machine be kept on an even keel a very wide sweep must be taken to get round. The "lift" of the machine is not directly down when banking, but at an angle, and, consequently, can be split up into a horizontal and vertical component. [Ten marks.]

**Q. 11.**—Why does it require more power to turn corners than to fly in a straight line?

From (10) it is obvious that some of the lift usually supporting the machine is being used to overcome centrifugal force, consequently if the total lift is not increased (1) by increasing the velocity, (2) by increasing the angle of incidence, the machine will tend to drop. Both of these manoeuvres require more power to carry out. In addition there is rudder and flap, or varying resistance, to overcome. The machine may also be compared to a propeller blade on an arm having a diameter equal to that of the turning circle, whilst an aeroplane in flight is traversing the circumference of a circle having an infinite diameter. It is well known that the larger the diameter of a propeller the greater its possibilities of efficiency, hence we have another explanation of loss in turning. [Ten marks.]

**Q. 12.**—You are flying across country without a compass, and have lost your bearings. What means are open to you by which you can obtain the approximate position of the points of the compass?

If the sun is shining and you are fortunate enough to possess a watch, you may find the north by the following method. Knowing that the sun goes through 180 deg. in twelve hours, i.e., from east to west from 6 a.m. to 6 p.m., we know how far it goes in any length of time. Suppose on looking at his watch the lost pilot finds that it is about 3 o'clock. The sun was south at 12 o'clock; therefore it has moved through 45 deg. since 12 o'clock, or one and a-half hours of the little hand on the dial and is in the position opposite to 7.30 p.m. Turn the watch round till "half-past seven" is pointing at the sun, then 12 o'clock is north, 3 o'clock east, 6 o'clock south, and 9 o'clock west. Similarly "1.30" is N.E., etc.

If the pilot is lost by night, he may be guided by the North Star, if any visible.

If there is a fog during the day the pilot might amuse himself with some pieces of wire and the magneto in making a compass needle, preferably in approved electro-magnet manner. Perhaps, however, it would be more satisfactory to remember that "somewhere the sun is shining" and try and find it, and do the watch dodge as explained.

It might be mentioned as a guide to the inexperienced that it is as well to land before trying the above, or, perhaps, in the excitement of scientific investigation, one may forget the controls and, in consequence, be reduced to a state where no compasses are needed.

[Seven marks. Total 107 marks out of a possible 120.]

[Of course, the idea of trying to make a compass needle on a modern aeroplane is quite absurd; even if it were done there is nothing to tell which is north or which is south. As many entrants pointed out, the ordinary village church affords a very good guide, as it is invariably Orientated, the altar being at the east end. Also, pilots, when starting on a cross-country journey, should invariably notice the direction of the wind; if this is done the direction of smoke from chimneys, etc., on the ground would afford an excellent check on other methods.—W. O. M.]

## MORE QUESTIONS FOR PILOTS.

1. You have landed on a ground you don't know, and are heading straight for a ditch at some speed. What means have you for checking the speed of the machine:—

(a) In an aeroplane of the Farman type?

(b) In an aeroplane of the Blériot type?

2. Under what circumstances would you suggest the trying of a propeller of less pitch on any machine you may be flying?

3. Why does an under-powered aeroplane fly tail low?

4. You are in the position of having to make a forced landing in a field full of bushes apparently about three feet high. How would you land under these circumstances?

5. Do you consider that an aeroplane should have a front elevator? Give your reasons.

6. Is there any relation between the speed of a machine and the maximum wind velocity it is safe to fly in? Give reasons.

7. What are the disadvantages of rotary motors as applied to aeroplanes?

8. Why is a good gliding angle advisable in an aeroplane? 9. What effect has the gyroscopic action of a rotary motor on a biplane of the Farman type?

10. In your opinion, has the span of an aeroplane any influence on the lateral stability? If so, what?

11. What are the objections to putting a propeller (i.e., a tractor-screw) at the front of an aeroplane? And what are the advantages of this arrangement?

12. Why does the wash of one aeroplane have a disturbing effect on another?—[W. O. MANNING.]

[A prize of £1 s. will be given for the best set of answers to the above questions. Papers must be delivered at 166, Piccadilly, W., not later than November 23rd, and competitors should be careful to put their names and addresses on the last page.—ED. THE AEROPLANE.]

## The French Michelin Cup.

The French Michelin Cup has been won by Hélien, who on September 8th covered 781½ miles on his Nieuport. The Somerby Cup, for the longest non-stop flight in a straight line, which will only be finally awarded on November 1st, 1913, has been won for the six months ending October 31st by Védrières, who covered 247 miles without landing from Paris to Angoulême in the Paris-Madrid race.



## The Week's Work.

## Monday October 30th

BROOKLANDS.—Gale blowing. Too much for pupils, but Rippen tried straights on Hanriot, now in running order again.

## Tuesday, October 31st.

BROOKLANDS.—Fleming on Bristol out to test air, and then up with Capt. Allen, of the Welsh Regiment, who is making excellent progress. Capt. Harrison up for two circuits in fine style, banking well at turns and landing nicely. Allen then for short flights solo.

HENDON.—Prensiel, Tremlett, Sacchi, and Allen making straight flights on Blériots, showing great progress. Parr flew three circuits of aerodrome, both he and Sacchi now quite ready to pass for certificates, but prefer to get more practice, especially in landing, before attempting official trials.

Early in morning Capt. Loraine out making several fine flights on Valkyrie racer. At same time Chambers practising on school machine. Later Mr. Barber was out on Valkyrie No. 10, making several pretty flights.

THE PLAIN.—Weather little calmer, and, after usual trial, Mellersh up for solo for about fifteen minutes and performing very fine circuits.

## Wednesday, November 1st.

BROOKLANDS.—Fleming out testing. Afterwards Lieut. Harford for altitude, but came down and handed over to Fleming, who went up to 500 ft. for further test. Capt. Harrison for two circuits. Fleming for short flights with Capt. Allen to teach landing, and Allen then out alone. Afterwards Fleming up with Major Benwell, and then Benwell doing straights alone. In evening Harford passed altitude tests and took certificate. Capt. Harrison did two figures of eight in excellent style. Capt. Allen made half-circuit with good landing. Major Benwell doing straights. Fleming finishing day with spiral *vol plané* from 900 ft. E. V. Sassoon on "Big Nat" Blériot, up at 700 ft., and flying in excellent style, new Régy propeller making a big difference.

Lieut. Hewlett flying well on Blondeau-Farman. Rippen out on Hanriot. At Deperdussin School, Baldwin and Sabelli out on taxi, and Bell with Lieut. Wilkins demonstrating on two-seater.

HENDON.—Weather beautiful, and all Blériot pupils out, Tremlett, Prensiel, Sacchi, and Allen continuing practice, and Welburn, Potet, and Brière rolling on the school Blériots. Driver went out with 50 h.p. Blériot, making two long flights, one for forty minutes at between 3,000 ft. or 4,000 ft., finishing up with beautiful *vol plané*. Salmel also out on Blériot practising high flying, and later on racing an express on Midland Railway, passing it easily in few seconds. Gustav Hamel out on two-seater Blériot taking up several passengers.

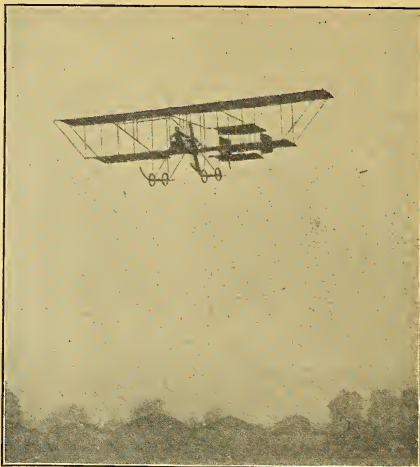
Ross, Morris, and de Villiers, of the Chanter School, out practising nearly all day on the school Blériot. Mrs. Stocks, of Grahame-White School, passed certificate tests in excellent style, this little lady being a far better flyer than most men. She flew at average height of 250 ft., doing sharp right and left hand turns and landing perfectly after each test.

Conditions ideal early in morning. At 7 a.m. Capt. Loraine up on Valkyrie racer at 300 ft., and then made several figure eights. On descending he decided to fly for his certificate. He then rose several hundred feet and made first five figure eights for his brevet, attaining quite twice necessary altitude. His *vol plané* descent was very fine. Messrs. Driver and Salmel officially observed this flight. Persistent gales have prevented him from making second test flight. Just before dark Mr. Barber gave an extended passenger flight to Miss Franklin. At same time Ridley-Prentice out on school machine and made two circuits at 100 ft., descending *en vol plané* with very light landing. Chambers then took over machine and made an excellent circuit.

THE PLAIN.—Wind not abated; no flying attempted till 3.30 p.m., when Busted made two trials on No. 7, testing engine. Then Jullerot made two solos on No. 43, after which Mellersh was sent for his certificate, observed by Mr. Cockburn and Lieut. McArthur, and completed the first part of his tests in very fine style, darkness preventing him passing whole test. Busted also took Lieuts. Ashton and McArthur for flights. Practically all the pupils at the school are now quite ready to undergo the tests for their certificates, and, given favourable weather, a large number of certificates should fall to the lot of the Bristol Company.

HUNTINGDOVE.—W. B. Moorhouse made another fine flight. Just before dark started for Cambridge, and made two wide circuits of town. Returned in darkness, guided home by flare lights on Portholme. Journey of 40 miles took 42 minutes.

FLEY.—Oxley out trying a new machine, but strong wind only permitted rolling. Large passenger-carrying machine,



H. R. Fleming on his Bristol doing a right-hand spiral glide with the propeller stationary.

which is fitted with 60 h.p. Renault, is now completely ready for flying at Fley, and is only waiting fair weather. It is expected that this machine will easily lift three passengers.

## Thursday, November 2nd.

BROOKLANDS.—Very bad day. Rippen testing Hanriot, and in evening Bell, of Deperdussin School, flew a couple of circuits on same machine, just by way of friendliness. Useful idea, as a little variety of machines gives pilots better estimate of real value of their own mounts. Too windy to-day for pupils. Durocq also out, and Anderson on Birdling biplane.

## Friday, November 3rd.

BROOKLANDS.—Fleming up early with Capt. Gordon, of R.M.L.I., a new pupil, for first lesson, at 1,200 ft., coming down in spiral *vol plané*. Pupil delighted, but frozen. Capt. Harrison then out for first part of brevet, doing five eights at 70 ft. to 100 ft. and landing within a few feet of observers. Capt. Allen then out on second machine up to 80 ft., and did two circuits with fine banking and good landing. Capt. Allen's progress very good, as had only about seven days of flying weather, and then in mornings only. Major Benwell up for several half-circuits, doing much improved landings.

Bell, on new 35 h.p. Deperdussin two-seater, out for a couple of fast circuits. Lieut. Hewlett started for brevet tests and did first half excellently. Then Gnome started missing and stopped rest of test.

HENDON.—Morris doing straight-line flights on Chanter Blériot. Unfortunately forgot to flatten out till too late, with result that he smashed his propeller, but escaped other damage.

Heavy fog prevented start before 9 a.m., when Mr. Barber ascended on No. 11. Only accomplished few circuits before strong wind rose, gradually increasing to gale, which prevented any flying during week-end.

## Saturday, November 4th.

BROOKLANDS.—Fleming, on Bristol, started with Capt. Gordon as passenger. Just leaving ground when radius rod of running wheels came adrift. Inside wheel came off and trickled back into propeller, which promptly burst with bomb-like explosion, whereupon passenger remarked to pilot, "I think something has happened." Said pilot to passenger, "Is the propeller damaged?" "I don't observe any," replied passenger. Meantime engine putting in more r.p.m.'s. than a Central American republic, so Fleming switched off and made good landing. Then both, looking up, observed one blade of propeller doing excellent spiral *vol plané* on own account, having apparently been practising for new R.Ae.C. special certificate by itself. Other blade had previously spun

across ground and just missed going into *Blue Bird*. Fortunately no one in enclosures to be hurt, but this should be an object-lesson to pilots not to fly close to enclosures when crowded, for this blade travelled about 200 yds. Lumps of blade managed to miss tail booms, but completely carried away both ailerons and left machine without lateral control, for rudder control did not stabilise when slip-stream of propeller ceased. Tail-boom staywires also badly strained.

No flying rest of morning, but in afternoon Blondeau did one circuit in bad, puffy wind and got much shaken up, and Spencer also did a lap or two.

HENDON.—In high wind Hamel took up passenger, who, being expert sailor and used to sea in small yacht, thoroughly enjoyed himself. Several ladies also wanted to go up, but both M. Chereau and Hamel thought it more prudent to postpone flights for calmer day.

THE PLAIN.—Strong wind still blowing in morning, but after trial Lieut. Joseph made straight solo flight, and Busted took McArthur and Stuart for tuition flights, after which nothing further was done owing to gale.

#### Lanark Aerodrome.

Gale, which commenced last Sunday and continued throughout week, prevented any flying, but MM. Baumann and Dubois, two new French pupils, took their first course of lessons.

Mr. Ewen, who expected to be able to fly the Deperdussin back from Edinburgh, was prevented from doing so by the high winds, and brought it back by rail.

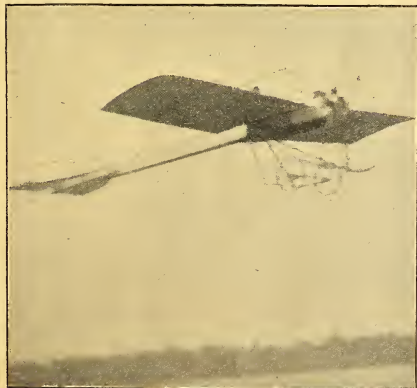
On Sunday the gale reached its climax, when such a gale was not known in Scotland for the last thirty years. However, the wind has steadily decreased since Sunday, and the pupils and staff expect to get in some useful work this week.—H. O. WALSH.

#### Doings at Eastchurch.

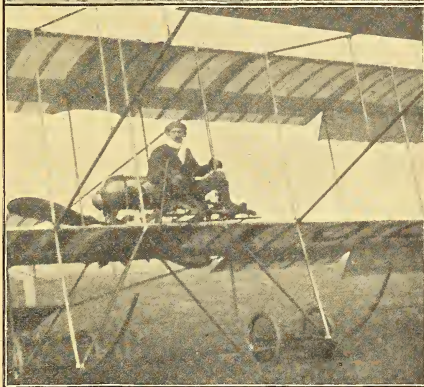
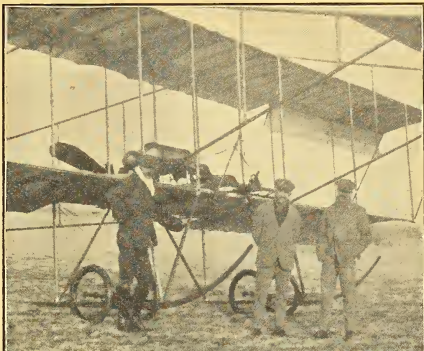
"Writing on Tuesday, October 31st, an Eastchurch correspondent says: "Interest centred on Sunday around the trial of another new twin-engine machine which has just been completed in the shops of Messrs. Short Brothers, the design of which is included amongst their patents for twin-engine."

"No doubt the method of employing the two propellers will be largely criticised, as it has always been an accepted theory that one propeller working directly in the wake of another is not an ideal and efficient arrangement; but, so confident has Mr. H. L. Short been that this system could be made quite efficient and simple, that the present machine was built, and on its first trials fully justified the confidence which the designer had placed in it.

"The machine is fitted with two 50 h.p. Gnômes, one behind the main planes in the centre line of the machine, with a single propeller, and the other engine directly at the back of the planes, on the same axial line as the front engine, also fitted with a single propeller. The nacelle is situated between the two engines, and is arranged with thwart-ship seats and dashboard, and dual control throughout.



! W. H. Ewen starting from Lanark for Edinburgh.



AT THE BRISTOL BROOKLANDS SCHOOL :—Capt. Allen, Lieut. Harford, and Capt. Harrison. Below: Capt. Allen about to start.

"The engines turn in opposite directions, so that there is no gyroscopic action and no engine torque, as one engine balances the other when both are running at the same speed and give off the same horse-power. The machine flies easily with either engine.

"So great has been the success of twin-engine drives, both with three screws, and the latest with two screws, that Messrs. Short Bros. are now commencing to build a machine of 250 h.p. which will have four propellers.

"Upon the dashboard of the machine, now under review are conveniently arranged a complete set of instruments such as an aviator requires, which include a speed indicator for each engine and an aneroid barometer, the latter specially made for aviation work by Short Bros. Another new feature introduced by the makers is in regard to the petrol supply, which is controlled by a special cock, which, in turn, is connected to an indicator finger working against a graduated dial, thus enabling the tap to be set to the most suitable opening and the exact position noted—a detail of considerable importance in relation to the Gnôme engines. As before mentioned, the machine is fitted with dual control, so that it can be operated from either seat, and by a neat arrangement the switches and throttles of the two engines can be worked either separately or both at once by a single movement of the hand, as occasion requires.

"Mr. Frank McClean, who piloted the machine on its first run, did not attempt any preliminary ground rolling, but took the machine straight into the air and made a lap of the aerodrome at a height of about 100 feet. On descending he ex-



pressed great satisfaction at the behaviour of the machine, which flew extremely well and at a great speed. During the afternoon he made several extended flights, taking in turn Lieut. Samson, R.N., Lieut. H. V. Gerrard (brother of Capt. Gerrard, the aviator), and Mr. J. L. Travers, of Messrs. Short Bros., as passengers. For a final flight, taking with him Lieut. Gregory, R.N., as passenger, Mr. McClean made a long tour of the island, passing over Queenborough and Sheerness, keeping at an altitude of about 600 feet the whole way. The machine exhibited splendid climbing powers, rising with unusual rapidity.

"Two other machines of original design were also tried in the afternoon, the Dunne biplane and the Jezi biplane.

"The first named is Lieut. Dunne's original machine, which was first constructed at Leysdown. Since its last trials, however, it has been entirely reconstructed, and it is understood a considerable saving in weight has been effected. Several short flights were made during the afternoon, Mr. Dunne piloting.

"Late in the afternoon Mr. Jezi tried his interesting little biplane, which, since its last appearance, has been fitted with a more suitable propeller.

"This afternoon (Tuesday) Mr. Valentine paid us a flying visit, and, although there was an extremely disagreeable wind, he went for a short flight on his Deperdussin monoplane. He was barely on terra firma again when a rain storm burst.

"Major Brocklehurst is building a new machine and hopes to have it finished in about eight weeks or so."

#### A New Valkyrie Pilot.

On Tuesday morning Captain Loraine finished his certificate tests on the Valkyrie racer. He is, so far as we can gather, the first pilot to pass for his brevet on a 60 m.p.h. 50 h.p. machine. Congratulations!

#### The Royal Aero Club.

COMMITTEE MEETING.—At the meeting of the committee held on Oct. 31st, Mr. Ernest Rosenheim was elected a member. The aviator's certificate was granted to: 1st, Frank Martin Ballard (Herbert Spencer biplane, Brooklands) (subject to permission of Aero Club of America). [In the official notices of last week the name of Lieut. H. A. Williamson, R.N., was included amongst the certificates granted. This was in error.—H. E. PERRIN.]

BRITISH EMPIRE MICHELIN CUP.—The competition for this year closed on Tuesday last, the 31st ult. On Friday, the 27th ult., S. F. Cody, after doing about 160 miles, was obliged to land owing to a broken wire. On the 29th the weather was favourable, and many attempts were made at Brooklands, Salisbury Plain, and Laffan's Plain. S. F. Cody, however, was the only competitor to complete the minimum distance of 250 miles. The exact distance accomplished by Mr. Cody was 261½ miles. The Royal Aero Club will consider the observers' certificates on Tuesday next, when the award will be made.

ANNUAL DINNER.—The annual dinner of the Royal Aero Club will be held in London during the early part of December. A sub-committee has been appointed to carry out the arrangements, and the place and date will be announced at the earliest possible moment.

SPECIAL ROYAL AERO CLUB CERTIFICATE (under the rules of the Fédération Aéronautique Internationale).—The Royal Aero Club of the United Kingdom will grant a special certificate to aviators who have passed the following tests:—

a. Candidates must hold the F.A.I. aviator's certificate and be entered on the competitors' register of the Royal Aero Club.

b. The requirements are:—

1. A cross-country flight, out and back round a point situated at least fifty miles from the start. The turning point will be selected by the Royal Aero Club, and will not be indicated to the candidate until one hour before the starting time selected by the candidate. This flight shall be completed within three hours of the selected starting time.

2. A separate altitude flight of at least 1,000 ft. rise, which shall be verified by recording barograph, sealed by the observers prior to the start.

3. To glide from a height of at least 500 ft. above the ground to earth, with engine completely cut off, and alight under normal conditions within 100 yds. from the starting point. This glide may, at the candidate's option, be the conclusion of Test 2.—HAROLD E. PERRIN (Sec.).

#### The Women's Aerial League.

The following lectures are to be given at the Polytechnic, Regent Street, London, under the auspices of the Women's Aerial League, by Mr. L. Blin Desbleds:—

Friday, Nov. 17th.—General survey of the aeronautical situation in Europe, with special reference to England's dangerous position.

Friday, Nov. 24th.—Some lessons that have been learnt from the great French military aviation of autumn, 1911.

Friday, Dec. 1st.—Description and use of the different parts of an aeroplane, with practical demonstrations by means of models.

Friday, Dec. 8th.—Airships.

Friday, Dec. 15th.—Aeroplane motors and propellers.

Friday, Dec. 22nd.—Description of some of the great European flights, with moving pictures.

Fee for the course, 5s.; members of the League, 2s. 6d.

#### An Interesting New Machine.

The accompanying photographs give an excellent idea of the new Jezi machine, which is now flying very successfully at Eastchurch.

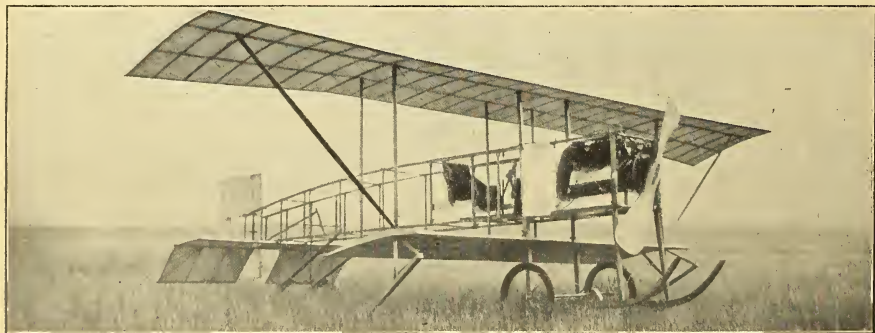
The drooping rear edge of the planes looks peculiar, but is due simply to the fact that, as in the case of the usual biplane flaps, there is no provision for upward warping: the rear edge rises to its normal position at about 40 m.p.h.

The machine flies at 50-55 m.p.h., and is completely free from the lateral swaying so common in tractor biplanes.

The machine is controlled by a universal lever and foot rudder pedals, the controls all being very powerful.

It should be noted that the propeller shown is an old one, fitted solely to make chassis tests.

Mr. Jezi has endeavoured throughout to get the speed and handiness of the monoplane combined with the structural advantages of the biplane type, and he seems to have succeeded admirably.



The latest Jezi Biplane. A very fast, light, and simple machine.



## On the "Special Royal Aero Club Certificate."

The new rules for the "Special Certificate" for aviators, particulars of which are published elsewhere in this issue, appear to be drawn up in rather a curious manner, and it is difficult to understand what good purpose they are intended to serve. The aviator who has passed them would not have demonstrated anything of importance with regard to his skill, as it is possible for many a man who has only just got his ordinary certificate, and who is not sufficiently experienced to be allowed to fly across country with safety to himself, to carry them out satisfactorily, if he has luck.

Let us examine the rules in detail. In Rule 1 it is stated that the route the candidate has to travel will not be made known to him until one hour before the start. Why? Is it to prevent his having the assistance of a map? Surely the ability to read a map accurately while flying across country is one to be encouraged, and not discouraged. But possibly the interval is given so that the unfortunate candidate who did not happen to possess a map showing the route to the turning point selected might have an opportunity of borrowing one.

The wait of one hour is also rather curious; if the aviator can succeed in borrowing a map in a shorter time than that allotted to him, would it matter particularly to anybody if he started at once? In any case, if the route selected does not happen to suit him, there is nothing on earth to prevent him discovering that his motor is not going satisfactorily, and postponing his attempt with the hope of better luck next time.

Nothing is said about landing, so I presume that, provided he completes the course in three hours, the candidate can land as often as he pleases.

Rule 2, which requires the candidate to rise to a height of 1,000 ft., and constitutes an entirely separate test, seems rather unnecessary, for it is quite certain that, in an average cross-country course, the aviator who did not rise to that height for at least the greater part of the first test should incur the ban of the Royal Aero Club for dangerous flying.

Rule 3, which requires a 500 ft. glide, seems to me to be extraordinarily lenient, as it is quite certain that an aviator whose skill does not reach beyond a 500 ft. straight *vol plané* ought not to be allowed outside an aerodrome under any pretext whatever, as in the event of a motor failure he would be a serious danger to himself as well as to unoffending members of the public on whom he might be forced to alight.

The great need of aviation at present is the prevention of fatal accidents, and one of the best ways of preventing them is to ensure, as far as possible, that no aviator is allowed to attempt feats which are beyond his skill. I affirm, and I think that practically all the aviators of this country are in agreement with me, that the tests I proposed in this paper last week should be satisfactorily carried out by a candidate *before he is allowed to go across country at all*, and that any aviator who does go across country without having carried out these tests should be severely dealt with by the Royal Aero Club.

A superior brevet might, with advantage, be given by the club, but its rules should be so adjusted as to ensure that the aviator who passes is an experienced cross-country flyer.

I suggest that the rules should run somewhat thus:—

(1) The candidate must fly a distance of not less than 300 miles across country, in as many stages as he pleases, provided the total distance is accomplished within three weeks. The course selected to be approved by the Royal Aero Club.

(2) The candidate must use the same machine throughout this test, the only part which it is permissible to replace being the propeller.

It would be distinctly advisable in selecting the route to

select one that would make it necessary for the candidate to land at least once in the country, away from an aerodrome, as the selection of a suitable landing-ground from an aeroplane is one of the most difficult problems that a man flying across country has to solve.

If it could be arranged that the candidate should have a motor failure at a time unknown to him the test would be greatly improved, but unfortunately this is not possible.

Cross-country flying under first-class weather conditions, and when everything goes well, is an amusement that could be safely indulged in by almost anyone who can steer an aeroplane at all. The trouble comes when things do not go well, when the motor fails suddenly, for instance; and it is in such emergencies as this that an experienced man may want all the skill he possesses to reach the only landing-ground he can see.

I should like to express my acknowledgments to Mr. Fleming, of the Bristol Company, for much useful information and many useful suggestions on cross-country flying.—W. O. MANNING.

### A Birmingham Aerodrome.

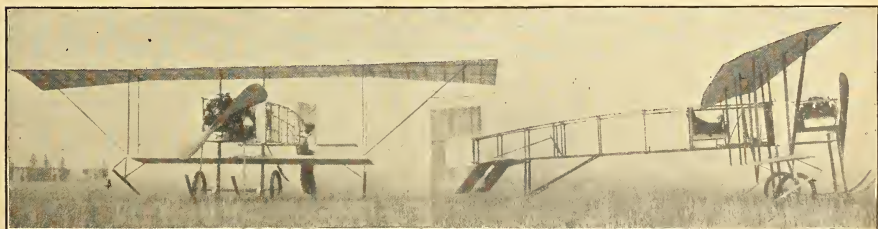
Birmingham will shortly possess an aerodrome upon its borders. Negotiations are now being completed between the Midland Aero Club and the Birmingham Playing Fields and Open Spaces Society, as the result of which the club will use the greater portion of the Castle Bromwich playing fields as a flying ground.

The possession of the Castle Bromwich ground will give the club a new lease of life, according to the views of one of its officials. For some time past it has been in a dormant state, and the apathy of the Birmingham public, as far as aviation is concerned, has spread to the club members. Under the direction of several of its prominent officers, including the hon. secretary (Mr. Gilbert Dennison), a forward policy has been adopted, the outcome of which has been the acquisition of the new ground at Castle Bromwich.

The ground to be rented is, roughly, a mile in length by nearly half a mile in breadth, and there is a "straight" of over half a mile. It has been cleared of all obstructions, and is regarded by experts as an ideal site for an aerodrome. A hangar has already been erected by Mr. E. T. Willows for his dirigible, the *City of Cardiff*. The forthcoming programme of the club includes the acquisition of a "teacher" machine, upon which members may learn all the necessary controls of an aeroplane, the erection of a 90 ft. starting rail, and the purchase of a glider. The intention of holding gliding competitions is also announced.

Mr. Gilbert Dennison states that it was hoped to get two or three leading aviators from London to take up hangars on the ground. The Midlands is a district which has not yet been touched by men who carry out passenger flights.

Mr. Dennison referred to the apathy of the public, and described it as "something extraordinary." "We hope, however, that we shall arouse enthusiasm by the acquisition of the new ground. It is admirably situated, for forty trains pass it every day, while the roads from Birmingham are excellent for cyclists and motorists. The great difficulty at Wolverhampton, from the point of view of the experimenter, was the fact that there was too much protection on the ground from the wind. At Castle Bromwich the ground is open, and if there is a wind it will be steady. During the winter months a lot of useful work can be accomplished, and there are many fine days upon which gliding competitions can be held." E. T. Willows will also be catering for balloon and dirigible ascents.



Front and side views of the Jezzi Biplane, now flying at Eastchurch.

## The Wright Gliding Experiments.

So much has been said lately in the various papers about the Wright Bros. and their gliding experiments that the accompanying picture of Orville Wright gliding cannot fail to be of very considerable interest.

As may be seen, the machine is, to all intents and purposes, an ordinary Wright biplane, minus the engine, and is very little different, in fact, from the "Baby" used by Mr. Ogilvie in the Gordon-Bennett race at Eastchurch last summer. It will be noticed, however, that on the left of the pilot and just in front of the leading edge of the planes there is a vertical plane apparently fixed. This, one may assume, is merely placed there to act as a fulcrum for the leverage of the rudders, and differs in no respect in its function from the familiar blinkers used on the point of the Wright skids.

Private information from Paris says that all the stories about the automatic stabiliser, and so forth, have merely been allowed to get about by the Wrights themselves simply as a joke, to puzzle the unfortunate newspaper correspondents. So far as it is possible to learn anything, it appears that what the Wright Bros. are really experimenting for is to obtain data as to control and gliding angle.

It will be remembered that all their original experiments were made with a glider of the old type, with leading elevators and no tail. This was fitted with an engine and made to fly, and at the same time the Voisins, in Paris, developed the Chanute type of glider with a tail, but spoilt it by using a leading elevator. Since then every step in development has been made with the aid of the engine, and a certain amount of indisputable knowledge has been gained, such as the fact that practically no weight should be carried on the tail of a machine; that the rear elevator is better than one in front; that rudder surfaces should be powerful enough to overcome the warp, or ailerons; and that certain sections of planes are better than others at certain speeds.

Throughout all these experiments the engine has been something of a disturbing element, because engine torque, propeller torque, propeller slip, the action of the slip stream on the rudder and elevator, and on the planes themselves, have all brought in varying factors which complicated the problem of arriving at the most efficient aeroplane, simply judged as an aeroplane, and not as a motor kite. Apparently, what the Wright Bros. are now doing is utilising the knowledge gained in power-driven machines, and endeavouring to produce a more efficient aeroplane.

They are enabled to make their experiments by the fact that at their present experimental place they get a strong wind blowing direct off the sea, which is almost dead steady. This wind, striking the 30 or 40-foot sandhills, blows upwards with

considerable velocity. Supposing it to be a 20-mile-an-hour wind it would be blowing at 30 ft. a second. On striking the face of the sandhill it will be deflected upwards at an angle, still travelling at the same speed. According to the slope of the hill, so the upward velocity will vary in relation to the horizontal velocity.

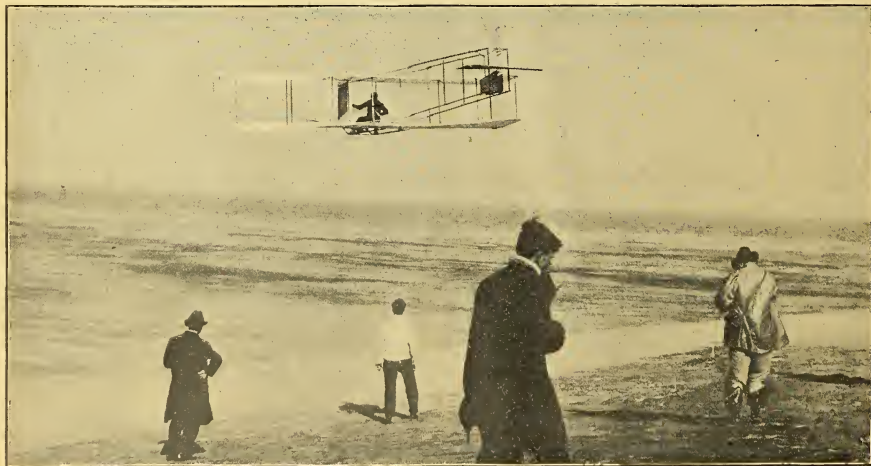
If the wind struck a slope of one in one, it would actually be rising at the rate of roughly 20 ft. per second. Consequently, if an aeroplane were so constructed that its gliding angle only allowed it to descend at the rate of 20 ft. per second, and it were launched off the top of such a slope, as soon as it struck the 20 ft. per second upward current it would remain stationary, for, as it glided 20 ft. downwards through the air, the air would be travelling 20 ft. upwards.

Of course, the trouble is that an aeroplane has also a horizontal forward velocity, and is liable to glide out through the wind which is being deflected upwards by the hillside into the wind which is merely blowing horizontally, and when it does so it continues to descend at its natural speed. However, a very clever pilot, by dropping the tail of the machine and increasing the angle of his planes as he found himself getting out into the horizontal wind, could succeed in being blown backwards till he was caught by the upward current and lifted again. He would then be carried upwards and backwards till he ran back into the region where the wind was curling over the top of the hill and becoming horizontal.

As soon as he found this region he would have to raise the tail of the machine and dive downwards and forwards, so as to drive into the up current again, when he would once more remain stationary, as far as altitude was concerned, until he ran out into the vertical wind again.

Provided the machine, and its controls and pilot, were all sufficiently efficient, and provided that the wind would continue to blow at something like a constant velocity, there is no reason why a man should not stop in the air from the time the wind rises in the morning until it goes down in the evening, and quite possibly in a gale such as that which stopped all flying during last week-end a man might, if he could only find a suitable hill, stop in the air for about three days at a stretch without an engine, till he finally reached that stage when, like the legendary American who was caught in the "spouter" of an oil well, he would have to be shot by his friends to prevent him from dying of hunger.

The Wright Bros. are materially assisted in their researches by the fact that, owing to the construction of their machine and its enormous variation of control, the speed can be varied through a much greater range than most, and, consequently, they can manoeuvre their glider in all kinds of different winds.



Orville Wright on the fabulous "one man-power flying machine." Mr. Alec Ogilvie is standing below the machine.



# VALKYRIE

## MONOPLANES.

THREE TYPES.

40-80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES,

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

TUITION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

THE AERONAUTICAL SYNDICATE, LTD.,

ESTABLISHED MARCH, 1903.

COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

# £750

## Ready to Fly

THE

# "Flanders" Monoplane

60-80 Green Engine ("Circuit of Britain" type).

65 m.p.h.r. (timed).

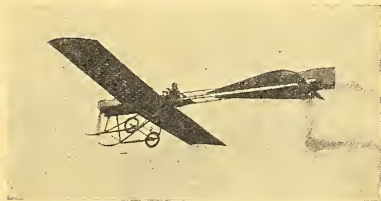
:: TWO OR THREE SEATS. ::  
TUITION FREE TO PURCHASERS.

(Low Fees to non-purchasing Pupils).

L. HOWARD FLANDERS,  
Brooklands, Weybridge.

## THE "DEPERDUSSIN" MONOPLANE

"The Aerial Yacht."



Single Seater Complete from £450 and upwards.

Passenger Flights—Cross Country Journeys  
on our 2-Seater Deperdussin Monoplane  
from Brooklands Aerodrome.  
The Best Passenger Carrying Monoplane.

## AVIATION SCHOOL AT BROOKLANDS.

Special terms to Army and Navy Officers.

Full particulars from

THE BRITISH DEPERDUSSIN AEROPLANE SYND., Ltd.,  
30, Regent Street, Piccadilly Circus, LONDON, S.W.  
Phone: 280 GERRARD. Wire: "MONODEP, LONDON."

## MICHELIN £500 TROPHY WON ON A

The Green Engine, always to the fore when records are to be made, has again proved its undoubted superiority. Cody—using his new type machine fitted with a 150-60 h.p. Green Engine—flew 261 miles 800 yards and thus secured this blue ribbon of the air. YOU cannot do better than to follow the lead of the pioneers.

Write for particulars to

The Green Engine Co.,

Sole Licensees under Green's Motor Patents Syndicate Ltd.,  
45, Berners Street, London, W.

Makers for the Patents—THE ASTER ENGINEERING Co., LTD.

# GREEN

## ALL-BRITISH

# AERO

# ENGINE

E.H.G.



### Honour where Honour is Due.

There are some people who think that THE AEROPLANE is too prone to criticise and too sparing of praise. As a matter of fact, THE AEROPLANE endeavours to be strictly impartial, and when any person or thing is worthy of eulogy he, she, or it gets it. Take the case of the Michelin Cup Competitions. The committee which decided to end the competitions in October, obviously the worst month in the year for flying, deserves adverse criticism. On the other hand, the winner deserves all the praise he can carry.

Of Mr. S. F. Cody himself it is impossible to speak too highly. Hampered at every turn during the early days of his aeroplane experiments by Governmental red-tape, he has won through, and has proved himself, as designer, constructor, and pilot, a man of whom any country might well be proud if he had only distinguished himself equally in either one of these three capacities. In combining all three, he is nothing short of a phenomenon. For his success in winning both Michelin Cups this year, and the only Michelin Cup last year, he has been dependent entirely on his own efforts, and owes no thanks to any man, excepting in one thing—the maker of his engine. It is to the Green engine that the writer draws attention.

Consider for a moment the Green engine's record. With a Green, Mr. J. T. C. Moore-Brabazon won the £1,000 prize for the first mile circuit on an all-British machine, namely, a Short biplane. Also with a Green engine, on a Short, Mr. Moore-Brabazon won the 1909 Michelin Cup. In 1910 Mr. Cody won the Long-Distance Michelin Cup, and in 1911 he won both the Cross-Country and Long-Distance Cups, all with a Green.

The only engine which went through the 24-hours' non-stop bench-test for the Alexander Prize last year was a 35 h.p. Green. The only British engine to get round the Circuit of Britain was a 60-80 h.p. Green, again on Mr. Cody's machine.

Of the eight machines regarded as serious competitors for the Michelin Long-Distance Cup this year, five—the Cody, Avro, Blackburn, Howard-Wright, and Flanders—were all fitted with Greens, and if the last four did not put up much competition, it was entirely due to adverse circumstances, and not to any fault of either engines or machines, as all were lifting extremely well, the Howard-Wright, in particular, finding itself in the extraordinary position of having between 250 to 300 r.p.m.s. in hand above the number necessary to lift it and its full load at its proper flying speed. As a matter of fact, it lifted its pilot, Mr. Spencer, much to his surprise, with 40 gallons of petrol and 10 gallons of oil on board, with the throttle only half open.

The little Army dirigible *Beta* has run for nearly two years with a 35 h.p. Green, and, in spite of having covered a greater mileage than all the other dirigibles in the country put together, including the £20,000 Clément-Bayard, all she now needs is a couple of new water-jackets, a matter of a few shillings. The Avro biplanes all this year have been doing splendid performances with 35 h.p. Greens, covering long cross-country journeys as single-seaters, and proving themselves most economical passenger-carrying machines.

Altogether, the Green engine has a wonderful record, and yet the War Office and British manufacturers alike continue to go abroad for engines. Under any test to which one cares to put them, the big Green engines can prove themselves superior to the fashionable rotary engines, and the little Greens are without rivals at their own size and rating. Mr. Green, the inventor and designer, does not by any means

claim to have reached finality in his engine, and he does not decry other British engines, many of which he believes are capable, if properly understood and handled, of putting up a good fight with his own, but he, and other members of the Green Motor Company, are naturally elated at the success of their work, and challenge anyone in this country to put up as good a show of results, and they look forward with equanimity to the outcome of the Alexander Tests this year.

Without holding any special brief for the Green over any other engine, and going purely on performances, one would like to find any foreign-built engine of similar weight for horse-power which can show as good results. Surely with such a record before one it should not be necessary to go abroad for engines, and, as it is obvious that future British war-planes must be fitted with British engines, the Green has every claim, patriotic, sentimental, and practical, to be given a fair chance of proving still further its usefulness on the machines which must, sooner or later, be bought by the War Office and Admiralty from British constructors.

### The Command of the Air Battalion, R.E.

It is stated that Major Sir Alexander Bannerman, R.E., is giving up the command of the Air Battalion, though no reason is assigned for the change. Though on occasion it has been necessary to disagree with his views on aeroplanes, there is no doubt that he is a highly efficient officer, and it is to be hoped that in his new post, whatever it may be, he may have scope for the great ability which he certainly possesses.

### A Useful Handbook.

*The Principles of Flight*, by Algernon E. Berriman, is a useful handbook for a student desiring to become acquainted with the main principles of aviation. It opens with a glossary, of somewhat limited scope, and continues with a well-written sketch of the history of flying and ballooning. After dealing with this, the author devotes the first half of the book to an exposition of various points germane to aviation, and concludes by a review of points at present unsettled.

In the second half of the book the author devotes himself to the mathematical side of the question, and here he is thoroughly at home. The main difficulty in this, of course, is to obtain safe practical values for one's constants. The author is to be congratulated on his strength of mind in refraining from any attempt to do this.

### Certificates at a Low Figure.

Some considerable excitement has been caused among constructors and schools by the fact that the Bristol Company have reduced their fee for tuition, including insurance against smashes, to the low figure of £75, thus bringing it absolutely in line with the War Office grant to officers obtaining their certificates. Naturally such a figure is only possible when a large number of pupils are forthcoming, but as, under this new arrangement, any officer can now learn to fly for nothing, barring his living expenses while at the school, the Bristol schools should be crowded with military pupils during the next few weeks. Fortunately, the firm is able to keep up a practically unlimited supply of machines and instructors, so pupils are sure of proper attention. It is understood that a number of high-speed, two-seater monoplanes for instructional purposes, and light, low-powered monoplanes for rolling and practice work will be coming to the various schools shortly. Twenty-five officers have already won their certificates on Bristols, and a dozen are now in training.



Mr. W. H. Ewen, on his Deperdussin, at Lanark, about to start for Edinburgh.

## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

### British Aeroplanes and the War Office.

Sir,—I see in to-day's *Daily Chronicle* the following: "A commission of British aviators, composed of Captains Fulton, Sykes, and Barrington-Kennet, delegated by the War Office, have arrived at Reims to follow the final test of the machines taking part in the big military aeroplane competition which is about to take place on the aerodrome at Betheny. It is stated that these officers have been instructed to furnish a report on the result, and that an important order for aeroplanes by the British Government to the builders of the best machines will follow." Seeing that there are no British machines in these tests, it means that our Government will place large orders with foreign firms without the British firms having a look in. The test thing to do would be to take a record of what the French machines do, then let the British machines go through the same tests in this country, and I am sure there are British machines that could do as well, if not better than these French machines.

Then perhaps the money that would, under the above conditions, go to a foreign country, would be spent in this country. Then, when we wanted any more machines, they could be got in this country, and we should be independent of a foreign nation for machines to protect the people of the greatest nation in the world. What about a Cody, Flanders, Bristol, Avro, Valkyrie, Blackburn? These are surely as good as the French machines. What is your opinion and the opinion of your readers?

Harrow, November 2nd, 1911.

P. G. REED.

[Mr. Reed expresses the opinions of a vast number of readers, and it may comfort them to know that there is still hope for forcing the War Office to support Home Industries, despite the fascination which everything non-British seems to exercise over that institution.—ED.]

### Parliamentary Language.

Sir,—Though appreciating the import of Colonel Seely's statement in the House, I do hope he is not going to perpetrate the term "Army airman" in the King's Regulations. I wonder how many aviators dislike this *Daily Mail* word, "airman"? There is an indefinable shabbiness about it, to my mind; a sort of down-at-heel poverty of expression.

This popular halfpenny paper describes, in the same issue, a motor-cycle accident as narrated by a "cowman." One shudders! Though we may hardly set up as purists since the general adoption of that misnomer "aeroplane," still, some of us hope that the War Office will not always look to the *Daily Mail*'s "scribemen" as authority for new expressions.

Littlehampton.

"LOOKMAN."

### A Mysterious Aeroplane.

Sir,—Can you let me know who was flying over the sea off Felixstowe last Sunday?

Apparently the aviator was about seven miles from shore, and flying over some warships.

DOROTHY PRENTICE.

[The machine was possibly the Blériot formerly flown by Mr. Hewitt at Brooklands, as it is said that he has hidden himself somewhere in the Eastern Counties. Or it may have been one of the new German war-planes from their new aviation base at Heligoland. Can anyone give further information?—ED. AEROPLANE.]

### The Certificate Tests.

Sir,—Concerning pilots' certificates, may I be allowed thoroughly to agree with Mr. W. O. Manning's remarks in the current issue of THE AEROPLANE.

In my opinion no pilot can call himself a *flyer* until he has cut his motor right out from a height of at least 1,000 ft. and landed in a limited area with his machine undamaged. This in case of engine failure when flying cross-country.

The tests as suggested by Mr. Manning would, I think, be

preferable to a 100-mile trip across country, as, owing to the cost of such an undertaking, a good many really sound pilots would be prohibited from ever attempting to pass their superior brevet.

As regards the last paragraph in Mr. Manning's article, this is particularly sound, as there are at least a dozen men we could mention who, although holding a pilot aviator's certificate, are quite incapable of passing the comparatively easy tests now imposed by the Royal Aero Club.

Brooklands.

C. GORDON BELL.

### Aviation at Public Schools in Edinburgh.

Sir,—As to my glider, of which you published a photo, I am sorry to say that the school authorities have stopped me gliding, so I have been breaking it up, and have almost finished a new one, which I intend to take with me up to Edinburgh. This is far superior to the old one, and I will send you a photo when it is finished.

Would you be so kind as to inquire in your columns whether there is anyone in Edinburgh who would care to help in gliding, and also if anyone there knows of a suitable place for the glider to be flown and kept. It is only 24 ft. by 18 ft., and could, if necessary, be taken in three sections.

G. T. COOPER.

[Will Edinburgh readers please communicate c/o THE AEROPLANE, 166, Piccadilly, W. 7.—ED.]

### Rotary Engines.

Sir,—Mr. Manning's statements in his article are absolutely incorrect as far as my engines are concerned, as they are designed to overcome the faults which have shown themselves to me from studying engines at the various aerodromes under flying conditions, and if he will be good enough to read the description and study the drawings appearing in your issue of October 26th he will see that the pressure of air he mentions is used for three purposes: first, for internal cooling; secondly, for supplying the carburettor with hot air; thirdly, for putting the mixture into the engine under pressure.

Re auxiliary exhaust, each cylinder is provided with a separate silencer, as shown in the drawing, and exhaust comes out at the exit cold. The piston is 5 ins. long, and as the stroke is 4½ the ports are never uncovered from below, so it is impossible for oil to be thrown out.

The carburettor is floatless, and controlled by a screw-down cock, so the petrol jet can be adjusted to suit any altitude when in flight by moving a lever.

The cylinders being opposite, and not staggered, this eight-cylinder engine only occupies the same length as a four cylinder, but a trunk has been added, 16 ins. long, to take the propeller well away from the fuselage and for the purposes he names.

The photos show that all wires are carried to each plug through a lined tube, and they do not hang round in festoons.

The aviator has always complained about the tremendous prices charged for aeroplane engines, and in this case I have tried to market an engine made of the best workmanship and material, guaranteed for six months, at a reasonable price, and to place a few engines on one month's trial to responsible people before payment.

W. L. ADAMS.

### Models v. Gliders.

Sir,—The articles that appear in THE AEROPLANE each week have been very useful to me. I am afraid that models will be left alone by papers till they have been practically supplanted by the increasingly popular glider. Just think what an impetus will be given to the sport of gliding by the Wright Brothers' present experiments in America.

The Mann monoplane model is certainly a triumph of design, but, except people eager to win prizes, who is there that wants to run half a mile to see two very scientifically designed propellers push a scientifically designed plane through the air, and then climb a tree or telegraph pole to fetch it? I think that the majority of people anxious to test a new plane or new propellers can do so very well on a model that does not fly so far but which will be able to be steered in any direction.

It is true that the Mann monoplane only carries one ounce of rubber to four ounces of the complete machine, but then my monoplane only takes 1½ ounces of rubber to 5½ ounces total weight, and I daresay there are many other machines as efficient.

Sudbury, Suffolk.

MONTAGUE L. ROLFE.



### Scale v. Flying Models.

Sir,—The making of scale models has been so much abused in your journal by various writers at different times that I venture to put in a plea in its favour.

Your reviewer of the models at the Horticultural Hall remarked that "Aero model makers may be divided into two classes: those who study flying and those who merely enjoy the miniature work involved in making scale models, and who are not the least interested in the theory or practice of the subject." I contend that that is a careless statement, or made without knowledge, and that the sentence should be altered into "Those who study flying and those who study flying machines."

It does not at all follow that because a man is so interested in the details of a full-sized machine that he is "not the least interested in the theory or practice of the subject."

The choice of type indicates, in my opinion, whether the maker proposes to devote his attention to full-size machines or to flying models. In making a scale model a man has his attention fixed on the conditions which appertain to its grown-up brother. The trussing is the same, as also are the control, the proportions of the members, the disposition of weight and surface, the setting out of the propeller, the behaviour of the chassis, and the weight borne by each point of support. The weight of a large machine can be obtained by multiplying the weight of the model by the cube of the linear scale; thus, in a sixth scale model weighing, say, 2 lbs., the weight of the large machine would be  $2 \times 6^3$  lbs.  $\approx 2 \times 216 = 432$  lbs.

A dummy engine and ballast to represent the pilot should be fixed, and be of proportionate weights found by the reverse of the above calculation. It is then possible to ascertain as to whether the machine is a good natural glider, what the gliding angle is, and much of the behaviour of a full-size machine.

These remarks apply only to scale models which are true copies of their originals; other scale models, which are a long story of compromise and approximation from beginning to end, are purposeless and trivial in the extreme. Some excuse for such models lies in the fact that the majority of model makers have not access to full working drawings and particulars of full-size machines, except such as are published in the aero journals, which, though helpful and instructive, are unavoidably somewhat incomplete, as manufacturers, while willing to interest the public, are not always willing to give full details to possible rivals.

When a model maker, working intelligently, has produced a true copy to scale of some successful machine, I am convinced that he has learnt nearly as much relating to that type as another man (who possibly calls himself a designer), who has produced a dead copy, full size, but with infinitely more trouble and expense. The knowledge he has gained is equally applicable to the construction of a full-size flyer embracing original features. The construction of aeroplanes has so much advanced that it is well to study in detail the work of the best exponents before venturing upon any innovations.

The reviewer was impartial enough to mention two scale models as possessing merit. The case of the "fine model of a Blériot" comes within my own particular knowledge, as it was made at the Regent Street Polytechnic workshop classes under my supervision, to working drawings from which a full-size flyer could be made. The maker, far from being uninterested in theory, also attends Mr. L. Blin Desblid's lectures on "Aerodynamics," and, quite unrepentant, is now about to construct a scale model of a would-be full-size flyer embracing original features, based on experiments with paper gliders. From the behaviour of the scale model as a glider it will be possible to find out exactly how the full-size flyer will behave.

The full-size flyer may afterwards be produced from the same drawings with as little delay as if it were the second of its type.

B. GRAHAM WOOD

(Instructor of Workshop Practice and Aeroplane Drawing and Design at the Polytechnic, Regent Street).

### Our Schoolboys.

Sir,—I was much interested at reading the letter under the above title by "An Old Westminster Boy," but should like to suggest that the sentiments of the rising generation towards aviation are largely the result of the absurd views held by their headmasters. The authorities of the Public Schools of Great Britain, whose knowledge of aviation is confined to the flights of Daedalus and Icarus, as described by Ovid, present a hostile front to the school aero club movement, and considerably hamper the propaganda work of the Federation of School Aero Clubs.

It is an absolute fact that at many of our Public Schools boys are strictly forbidden to attend aerodromes or flying meetings, and, incredible though it may seem, a kind of censorship is exercised over aviation papers. At one or two Public Schools the making and flying of models are distinctly forbidden, and at many others every possible discouragement is placed in the way of those boys interested in model work. I could quote cases of boys desirous of forming aero clubs in Public Schools who were given the alternative of leaving or discontinuing their work. There is no one in this country who has a more practical knowledge of the interest taken in aviation in our schools than myself, and I make the definite assertion that but for the suppressive methods of the school authorities every Public School in Great Britain would possess a flourishing school aero club, many equipped with gliders and at least one with a full-sized machine.

The staffs at the vast majority of our Public Schools are composed of men whose attitude towards aviation and all that pertains to it is but inadequately expressed by the term "bigoted," and the headmasters are even more hopeless. The reason for the opposition is as follows, and I have been told the same in so many words by a distinguished scholar who presides over the destinies of one of our greatest Colleges. If a boy is allowed to become interested in aviation he will probably make models. If he makes models he may feel tempted to construct a glider. If he constructs and flies a glider he will probably want to become a pilot, and, should he follow this course, he will certainly be killed! This attitude of our Public School authorities means that the next generation of our ruling classes is being educated to regard aviation as a highly dangerous sport, and this, too, at a time when young men of a similar class and age on the Continent are actually taking their brevets.

The British Federation of School Aero Clubs has a good following among the members of secondary and private schools, but until it obtains a footing in our Public Schools not much practical work can be accomplished. Until the time is no more when models have to be smuggled in and out of school premises in cricket bags, I am afraid that the state of things in most Public Schools must be considered unsatisfactory. If "An Old Westminster Boy" or any other old Public School man cares to write to me on the subject, I shall be very pleased to put them in possession of facts about the suppression of aero clubs in schools that will occasion them considerable surprise. Furthermore, it may be advisable to state that the Federation of School Aero Clubs is the only body in this country that devotes itself to rousing our younger generation to a proper appreciation of the possibilities of aviation, and that its work, patriotic and national though it is, has received little or no support or encouragement from old Public School men, without whose help and co-operation very little practical work can be accomplished.

ROBERT P. GRIMMER

(General Secretary to the British Federation of School Aero Clubs).

15, Arlington Road, Surbiton, Surrey.

### THE VISITORS' LIST.

MR. NORMAN, of the Scottish Aviation Company, says that he is very well satisfied with the progress being made at Barrhead. Lieut. Warrand and Captain Forsyth are making quite good progress on the school Blériot, and Mrs. Lucking, the first pupil aviatrix in Scotland, has joined the school. Mr. Philpott, the firm's school pilot, has been making good flights over the surrounding district on the Blériot and on the Scottish-built engine-behind biplane. The latter is shortly to be fitted with a go h.p. Alvaiston motor, built in Glasgow, and when tuned up will go for the £1,000 prize now on offer for a flight from Edinburgh to Glasgow by an all-Scottish aeroplane. This engine has already given excellent results on a two-hours' bench test, and Mr. Norman is sanguine of its success. The firm have recently opened a new workshop, and a biplane of the modern Avro type is almost finished, so if the school can secure its share of Army pupils under the new War Office policy it should do well in the near future.

MR. FRANK MCLEAN expressed himself as being greatly pleased with the new experimental Short biplane, the latest having two engines and two propellers, instead of the three propellers tried on the first twin-engine machine. The machine in question is an ordinary Short biplane, which has already seen a good deal of work, but it is simply strong to



carry the 100 h.p. of engines now fitted into it. Mr. McClean says that the machine will fly quite well with either engine, and that with the two working it raises a speed of approximately 55 m.p.h. Apparently one peculiarity which this machine shares in common with the three-propellered machine is that it does not bank itself naturally going round a corner, but that, when based up by the use of the ailerons, it manoeuvres very easily. Mr. McClean has already done a considerable amount of cross-country flying over the Isle of Sheppey with various passengers, and is quite enthusiastic about the possibilities of machines with two engines. Undoubtedly for passenger-carrying work the system has a great deal to recommend it, and should come into general use, but it naturally presents difficulties when applied to the very small high-speed single-seaters which would be necessary for military and naval work in addition to the big multi-seaters.

**MR. G. S. WILSON**, of the *Edinburgh Evening News*, whose paper does more to keep an interest in aviation alive in Scotland than all other Scottish papers together, while not by any means satisfied with the state of aviation in that country, admitted that progress was being made. He was particularly enthusiastic over Mr. Ewen's excellent flying, especially his last big flight from Lanark to Edinburgh on the little 35 h.p. Deperdussin. Mr. Wilson and his cousin, Mr. Robert Wilson, who had driven up from Edinburgh for the Olympia Show, paid a visit to Brooklands during the week-end, and made a close inspection of the various sheds, with a view to future developments in Scotland.

**MR. J. R. DUGAN**, who had just come from Manchester, where he had been watching the construction of his new Avro biplane at Brownsfield Mills, has now decided definitely to go to Huntingdon to make his tests with this machine and an Alvas-ton engine. After inspecting most of the aerodromes in England he has come to the conclusion that the Portholme is the finest centre for cross-country flying, and that the aerodrome itself is unsurpassed as regards surface for a learner.

**MR. DASHWOOD LANG** gave a vivid account of his cross-country flight on the Bristol two-seater monoplane, with Mr. Gilmour, from Salisbury Plain to Woking. It appears that they had quite good weather as far as Basingstoke, where they fell into a *remous*, which dropped them about 250 ft. in a few seconds, and from there on, till their Gnome engine let them down, they had a very rough passage, which would have been much worse but for the pilot's perfect handling of the machine. The French pilots and mechanics who belong to, or visit, the Bristol School on Salisbury Plain are certainly not far from when they say that Mr. Gilmour is one of the two or three finest pilots in the world, and it is certainly most lamentable that he had not the opportunity of showing what he could do against the crack French flyers in the "Circuit of Britain."

**MR. A. V. ROE** came in to discuss the position of British constructors as regards Government orders. He, like other constructors, is prepared to enter a machine for any competition the War Office likes to get up, so long as it is understood that orders will be given to the makers of the machines which pass the necessary tests, and, knowing what the little Avro biplanes, with their 35 h.p. Green engines, can do in the way of passenger carrying and cross-country flying, it is certain that a bigger Avro, with a 60-h.p. Green, could pass with ease any tests which the French biplanes could pass. It is only to be hoped that he will be given a fair chance of proving that his machines can do so.

**MR. HARRY DELACOMBE**, just back from Reims, was even more interesting than usual. He says that the Paulhan torpedo, though in a way a freak, is certainly the fastest thing with wings to-day, and estimates its speed as being fully 70 m.p.h. As regards the landing tests at Montcornet, he says that when the tilted land was wet the machines with small wheels had no chance of getting out of it, and that one of the Bréguets spent over half an hour rolling up and down one stretch in the hopes of rolling a flat track for itself from which it could get up. The big diameter wheels of the Deperdussins stood them in particularly good stead, for, when once they got moving, the big wheels did not sink in again. Mr. Delacombe says that the Astra triplane is a remarkably fine flyer, in spite of its appearance, and would have done well but for engine troubles.

## The First Air Car.

The air-car is now in sight, and at the Blériot works the first, to order of Baron Deutsch de la Meurthe, may be seen. It resembles a well-appointed taxicab in a large monoplane, and rests on a modified Blériot chassis. The driver, placed outside the car itself, has a seat resembling that of a car

driver, with a spare seat on his left. The motor, of 100 h.p., and propeller are placed at the rear of the body.

The windows are made of mica, and some being placed in the floor will afford the passengers a view of the country below when the car is in flight. M. Norbert Chereau, M. Blériot's manager in this country, informs *THE AEROPANE* that in its general lines the machine resembles the Blériot four-seater tried at Pau last winter.

## Materials for Models.

Mr. E. Melcombe, of Harpenden, sends a very interesting list of materials and accessories for aeroplanes, gliders, and models. He has had a deal of practical experience in the making and flying of models, and knows exactly what is suitable for the purpose. The firm have their own sawmills, where they cut and prepare their wood, and, being the actual makers of models and accessories, are able to compete with anyone in price. Contained in the list are several quite interesting notes on the selection of materials for model aeroplanes, and excellent advice is given on the kind of wood, fabric, and metal most advisable for their construction. The firm can also supply working drawings for flying models on the lines of Farman, Wright, Antoinette, and Blériot machines. The prices throughout are right, and the firm can be depended upon to give adequate attention.

## For Aeroplane Sundries.

Some time ago it was noted that the old-established firm of Pfeil and Co. had opened a special department for aeroplane sundries. Mr. Watts, who is in charge of the department, called recently and showed some excellent samples of his patent all-steel wire strainer, which is meeting with considerable success. An independent test made by one of the firm's customers recently showed that the 4 in. strainer only broke at a strain of 3,114 lbs., or, roughly, on 8½ cwt., and, even after that, the swivel worked freely, and had not jammed. Pfeil and Co. have now produced a wire ferrule to take the place of the old and unreliable copper tube ferrules used to secure the loops of wires. This is the type used successfully by Mr. S. F. Cody. Another new production is a varnish claimed to be waterproof, oilproof, and petrolproof.

## CLUB NOTES.

### Consinborough and District Aeroplane Society.

C. and D. Ae. S. held largest meeting ever organised in North of England on Saturday last, November 4th. Excellent flying witnessed by good number of spectators, and, owing to tricky cross wind, not so long as usual. Machines members' own design and construction. Sheffield, Birmingham, Doncaster, and Consinborough clubs well represented by Messrs. F. J. Wright, C. C. Allport, W. H. Gould, C. B. and W. R. Blake, E. Noble, J. E. Greathead, G. Dewnap, B. Jarvis, B. Clarkson, C. E. Webster, J. N. Foster, H. Brocklesby, and F. J. Robinson. Starter and Controller of the Field, J. I. Webster; Judges, Messrs. C. Ledger and W. Clarkson; Recorder, Mr. J. Makin. Winner of first prize, F. J. Wright of Doncaster, member of C. and D. Ae. S.; second, C. C. Allport, C. and D. Ae. S.; and third, G. Dewnap, of Sheffield. Longest flight, 630 feet in 28 secs., exceedingly good as a half-a-mile blow-in, in strong gusts. Meeting on Friday, November 10th, at Club Room, at 7.30 p.m. Will members make special effort to be present, as business important?—J. I. WEBSTER, T. S. WALLIS (Joint Hon. Secs.).

### Nottingham Model Aero Club.

Club bearing above title has been formed in Nottingham, for mutual benefit of all interested in aviation. Well-equipped workshop in Centra Avenue for use of members. Good programme in hand for future. Anyone interested, or wishing to join, should communicate with D. E. BARCLAY, 1, Fourth Avenue, Sherwood Rise.

### Bristol Model Flying.

Meeting held on Downs (Sea Walls) on Saturday last. In spite of wind, models of Messrs. Smallcombe, Edgar, Smith, Pearce and others did very good flights. Several "Smallcombe" type models flew very well and one of the "Smallcombe" reached height of 70 ft. Wind moderate, but of strong for competition, so again postponed. Next meeting at same place, Saturday, Nov. 11th, at 3.30 p.m. There should by now be enough model flyers in Bristol to form useful club. So competitors please come armed with suggestions.—R. V. TIVY.

### Yorkshire Aero Club (Model Section).

Carlton Hill ground not altogether suitable, being surrounded on all sides by buildings. Last Saturday's competition postponed. Will be held Sat., Nov. 11th, at Beckett's Park, Headingley. 15d. car stage on Headingley train car from town. All members please make effort to meet not later than 3.30, for afterwards getting very short. Wanted urgently! More members. TOM WALKER (Hon. Sec.), 5a, Hulland Street, Hunslet.

### St. Mary's Model Aero Club.

Good weather on Saturday, Eburne, out for distance records, made three flights of over a quarter of a mile each. Machine went straight for 300 yards, then turned to right and came down a quarter (¼ mile) from start in straight line. Other flyers did only about 200 to 300 yards, owing to circling. Duration went to Johnson with 30 secs.; Restall with 25.5; and Eburne third with 12. Novelties in shape of Murray's O.P.-1.1 machine and monoplane of modified Dunne type.—H.W. A. J.

### Blackheath Aero Club.

In spite of weather, many members got in practice for forthcoming competitions on first Saturday in December.

Members kindly note subscriptions due on Dec. 1st. 2/6 per annum, 1/6 for juniors under 16.

Practice at Kidbrooke and Lee Aerodromes during week-end as usual. On Nov. 11th, Messrs. Woolard and Clark will give demonstrations with various models, including "Rising from the Ground," at Shrofield Farm, near Grove Park Station, S.E. & C. Railway.

Committee will grant "Certificates of Merit" to members passing following conditions:—First Class Certificate—Flight of not less than 400 yards and separate altitude test of 60 feet. Second Class Certificate—200 yards, no altitude test. Tests observed by two members of Club, and the results forwarded to the Secretary at 5, Limesford Road, Nunhead, S.E. ARTHUR RIPPON (Hon. Sec.).

#### Liverpool Model Aero Club.

Although wind was stiff on Saturday, Ledward's models flew well. Only thirteen years of age and best model maker in club. S. Malins ran him close. J. Malins and J. Gavin, with single screw monoplanes, making splendid flights all afternoon. Fugh's "Cathedral" smashed in a heroic way after two decent flights. S. H. Clemence will read a paper at first discussion. Will members please say if Tuesday, November 14th, will be convenient date? New president is J. Hardman, of Blundellands.—A. G. FUGH (Hon. Sec.).

#### Birmingham Aero Club.

Committee now decided to hold weekly competitions at Billesley Farm. Two medals or badges will be awarded weekly. These will be for distance and duration respectively, and will become the property of the member who wins either six times in succession. First competition for distance held on Saturday and was won by Mr. E. Tryde, who was handicapped 150 feet, with 675 feet. Master Stamps second, 516 feet. Mr. Thompson, 453 feet.

After competition the glider (which was found in the next field to that in which it was left last week, having been blown over the hedge by the wind) was repaired and some splendid towed flights obtained. On Sunday also some good flights were obtained in the gale which was howling, some lasting over two minutes, while the towers remained stationary.

During last fortnight glider has shown signs of breaking up and last Sunday's flights will probably be last with the glider, but two members have gliders in course of construction, and Mr. G. Haddon Wood is starting one in shed on ground.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERLON, London.

Telephone: Mayfair 5407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
3 months, post free	-	1 8	3 months, post free	-	2 9
6 " " "	-	3 3	6 " " "	-	5 6
12 " " "	-	6 6	12 " " "	-	11 0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.

## MULLINER

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.

Sole Agents for **NORMALE PROPELLERS**

The Most Efficient Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race, the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA.

TELEGRAMS: "AEROCRAFT," LONDON.

## THE BENEY PROPELLER

British Design :: ::  
British Manufacture

AS USED ON THE "FLANDERS" MONOPLANE.

ROBERT BENEY, 7, Carlisle Street, Oxford Street, London, W.

## T. W. K. CLARKE & Co.,

SPECIALISTS IN OXY-ACETYLENE  
WELDED WORK.

CLARKE PROPELLERS.

CLARKE LANDING WHEELS.

CLARKE ACCESSORIES.



Send for our "FLIGHT FITTINGS" Catalogue

Fully Illustrated : : : : By Post 3d.

Crown Works: KINGSTON-ON-THAMES.

## 'Blackburn' Monoplanes & Propellers.

TUITION.

Mr. B. C. Hucks' double non-stop flight from Weston-Super-Mare, across Bristol Channel to Cardiff and back, was made on BLACKBURN monoplane fitted with BLACKBURN propeller.

\*Phone: 2822 Central.

The BLACKBURN AEROPLANE CO., Balm Road, LEEDS.

Telegrams: "Propellers," Leeds.

## E. T. WILLOWS LTD.

STOCK "City of Cardiff" Type, to carry 4, £900 complete.

DRIGIBLES New Light 2-Passenger Model - - £370 "

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM





## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted ONLY—18 words **1/-**. 1d. per word after.

### PATENTS.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS.

THE AEROPLANE will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to THE AEROPLANE, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

### FINANCIAL.

**£100** Required by Experienced Engineer to market Powerful First Class Aero Motor, embodying these improvements: Highest compression, variable, quarter down stroke, thorough cold air scavenger. Gas enters w.th. exhaust ports closed. Estimated weight two lbs. per h.p. Drawings proving immediate success shown to speculative party; no sooted valves, sweet action, good interest. Box No. 402, THE AEROPLANE.

### MACHINES.

FOR SALE, new BLERIOT monoplane, exactly the same as Beaumont's. Immediate delivery London. Also new HOWARD-WRIGHT biplane. Immediate delivery London. Low price for quick sale. L., 51a, Conduit Street, W.

**£400** SPECIAL OFFER of twelve AVRO Biplanes complete with 35 h.p. Green engine. Usual price £600. Offer withdrawn November 30th. Write at once for particulars.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**NO** REASONABLE OFFER REFUSED. New 3-seater "Valkyrie" monoplane; 80 h.p. engine; Spiral Tube radiators; Claud-Hobson carburettor; beautifully built and finished; been through trial flights; FOR SALE as a bargain owing to death of owner.—Box 401, THE AEROPLANE, 166, Piccadilly

**W**RIGHT type biplane ready for covering, complete with 80 yards of Pegamoid Fabric. Would make good glider, only £20. Box 7, THE POST OFFICE, Gloucester.

### ENGINES.

**50-60** H.P. GREEN. Dual Ignition. "Spiral Tube" radiators and tanks. £150. Box 335.—THE AEROPLANE.

**W**ANTED, 70 h.p. Gnome, in good condition, exchange brand new 50 h.p. Gnome and cash.—Box 400, THE AEROPLANE, 166, Piccadilly.

### PROPELLERS.

**P**ROPELLERS.—"Avro" Propellers of proven efficiency 340 lb. thrust with 30 H.P. engine. Equally good results guaranteed from other engines.—A. V. ROE & Co. Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best, Sole British Agents, GEO. W. GOODCHILD and PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

### EMPLOYMENT.

**A.** HUNTER, Certificated Aviator, wants position as pilot and mechanic: 10 years motor experience. Used to Goupy, Avro, and Farman. Willing to go abroad.—Write c/o Avro School, Brooklands, Weybridge.

## TUITION.

**T**UITION, with or without limited liability, Blériot XI.; personal instruction.—CHANTER, Aerodrome, Hendon.

**£50.** TUITION in flying till certificate is won. Avro pupils won Manville, Brooklands aggregate, 1st, 2nd, 3rd; Brooklands, October 4th, 1st and 2nd. The AVRO School for most thorough and all-round instruction. A. V. ROE AND Co., Brownsfield Mills, Manchester.

**L**ANARK AERODROME, N.B. Tuition for R.A.E.C. certificate on Blériot or Deperdussin Monoplanes. Fitted with latest type 28/32 Anzani. Passenger flights and exhibitions. Hangar accommodation. Terms on application to W. H. EWEN.

**H**ERBERT SPENCER FLYING SCHOOL, Brooklands Aerodrome, Weybridge. Practical Aeroplaning—Ballooning and Parachuting—constructional work Fee from £50—Special terms to Naval and Military officers.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

**D**EPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD. 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

**F**ILEY AERODROME. Tuition on Blackburn or Blériot Monoplane. For particulars apply BLACKBURN AEROPLANE Co., Leeds.

## MISCELLANEOUS.

**H**ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**C**AMERA, ¼-Plate Soho Reflex of latest type. Focal plane shutter, Zeiss Tessar F 4.5 lens, changing box, 12 plates. Best leather case. Just the thing for taking aeroplanes in any light. £16; cost £21 a few weeks ago.—Seen office of AEROPLANE.

## FLYING MODELS.

**"MANN" MONOPLANE.**—Owing to the enormous demand for this machine, we are unable, for the present, to accept any further orders. What we can still supply by return of post are parts for constructing a "Mann" Monoplane 5/6, "Mann" propellers 3/6 per pair, "Mann" geared winders 5/6, "Willis" ¼ inch strip rubber 1/6 per dozen yards, and "Willis" lubricant 9d. per bottle. From all large toy shops and stores, or post free in THE UNITED KINGDOM only from the sole manufacturers, WILLIS BROS., 14, Wellington Square, Hastings.

**M**ODEL PROPELLERS—Genuine CHAUVIERE—sin., 10in. and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.

**A**LLWEATHER single propeller Monoplane, guaranteed flight 1,000 ft., price 10/6 post free. THOROGOOD Co., Icknield Way, Letchworth, Herts.

# THE AEROPLANE

*Edited by CHAS. G. GREY. ("Aero-Amateur")*



Vol. I.]

THURSDAY, NOVEMBER 9th, 1911

No. 23

THE NEW

## "BRISTOL" Monoplane

is Remarkable for its

**SPEED, STRENGTH & STABILITY**

It possesses the well-known qualities of all the

**"BRISTOL" AEROPLANES,**

its construction embodying the

**Finest Materials, Workmanship and Finish.**

**TUITION for NAVAL & MILITARY OFFICERS  
on Monoplane or Biplane**

**£75** Including insurance against breakages and third party  
risks until Royal Aero Club Certificate is obtained.

Ample supply of School Machines and Instructors of the highest class at Salisbury Plain and Brooklands.

**FOR FULL PARTICULARS APPLY TO—**

**The British & Colonial Aeroplane Co., Ltd.,  
FILTON, BRISTOL.**



"THE AEROPLANE," NOVEMBER 16, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, NOVEMBER 16th, 1911.

No. 24

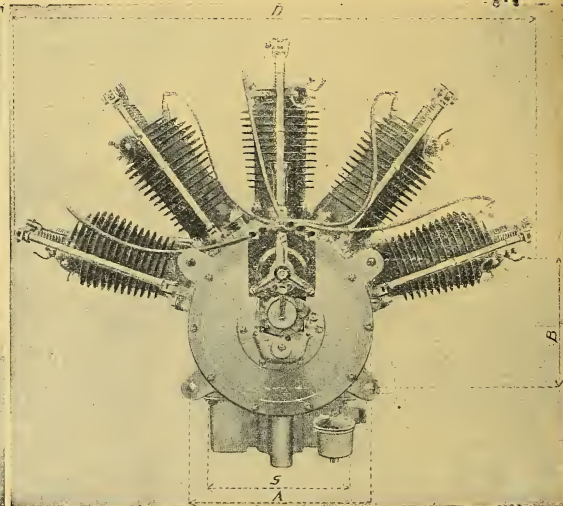
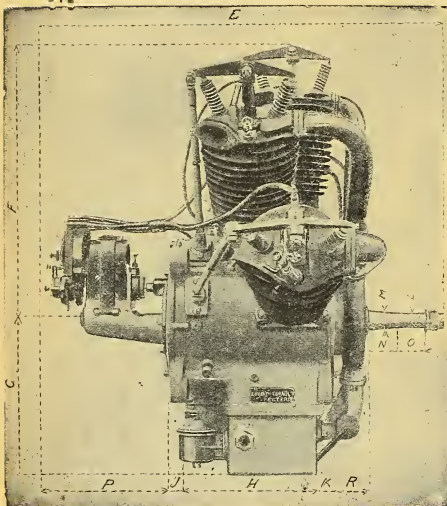
## RAPID TRANSIT.



The 80 h.p. Anzani-Deperdussin taking a corner at 80 miles an hour. France has a number of aeroplanes capable of this speed. England has none.

SMITHSONIAN  
INSTITUTION OCT 27 1959

# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.





## CONTENTS.

	PAGE
WHAT WE NEED ... ..	555
THE WAR OFFICE COMPETITION ... ..	556
THE ARMY AIRCRAFT FACTORY'S RECORD	558
AIR CURRENTS ... ..	560
THE CERTIFYING OF AEROPLANES...	562

	PAGE
THE WEEK'S WORK... ..	563
A NEW RADIAL ENGINE FIXING ... ..	568
THE FERGUSON MONOPLANE ... ..	569
CORRESPONDENCE ... ..	571
THE VISITORS' LIST... ..	573

## What we Need.

Destructive criticism is all very well in its way, and is very necessary when one is dealing with people like those who are unintentionally doing their best to wreck both our aerial defence and the British aeroplane industry, but we have now reached a point when something constructive is needed. It would, therefore, be well to put on paper what is actually wanted in the immediate future to put our aerial defences on a proper basis.

In the first year, at least three hundred first-class aeroplanes are needed for the Air Battalion, and officer aviators must be trained to fly them. A certain number of these machines, say a hundred of them, might be big long-distance machines, capable of carrying a pilot and two passengers, with petrol and oil for at least two hours; in fact, machines very similar to those machines which passed the French military tests. It would, however, be necessary to make a proviso that the speed of these machines must be at least 55 miles an hour; nothing less can be of the slightest use for military work. Whether they are biplanes or monoplanes does not much matter, so long as they have got the engine in front, and have the planes arranged so as to make, between them, a longitudinal dihedral, and thus have a certain amount of longitudinal stability.

Another hundred might well be two-seaters, either monoplanes or biplanes, which could carry the pilot and one passenger, and fuel for two hours. They should be capable of speeds of at least 65 miles an hour, and should be as small as possible, for ease of transport.

The other hundred should be very small monoplanes, capable of speeds of as much over 70 miles an hour as possible when fitted with big power. They should be built so that it is possible to take off the wings and pack the whole machine with ease on to an ordinary motor lorry, in order that they can be carried about with ease to any point of a fighting line.

As, at present, these little machines would be used very largely for practice purposes by officers who had only recently got their pilots' certificates, it would be cheaper to fit them with ordinary chassis and small engines, but for actual use in a field, where machines would be compelled to start off any kind of ground, and to get out of awkward places, it will probably be ultimately safer and cheaper in every way to carry on each motor lorry a starting rail and some form of launching apparatus, so that the machine can be thrown into the air at top speed in a few yards.

The ability to get up out of ploughed fields, and so forth, is worth very little in a military machine, for

if it made a forced landing in an enemy's country it would be captured long before it could repair the defect which brought it down, and in its own country the nearest troops would always have a starting rail ready for it by the time it was ready to go up again.

Every one of those machines should be built in Great Britain, and most strenuous endeavours should be made to obtain British engines to drive them.

## As to Engines.

It has been said over and over again that, although one or two British aviators have done well with British engines, it is impossible to get at the moment an English engine which will run as satisfactorily all round as some of the French engines. The answer to this simply is, that if the Englishmen who handle French engines would only take as much trouble to learn the peculiarities of the British engines as they have done to learn those of the French, the results would, in the case of several British engines, be just as good.

Where British engines have not given satisfaction, the trouble has been in almost every case due simply and solely to the carelessness or stupidity of the men who have had to handle them, or else to some little fitting going wrong, owing to the fact that practically every British engine has had to be fitted into every machine in a different way.

If one British engine were got right on one particular machine, there is no reason why a hundred engines of the same type should not work equally satisfactory in a hundred aeroplanes of the same type. The only reason this is not so is that no British manufacturer has yet been sufficiently supported, either by his own Government or by his own countrymen, to allow him to turn out two machines with British engines of the same sort.

When we have got 300 all-British machines similar to those specified above, then, and not till then, we may consider that something is really being done to put our aerial defences into proper condition.

## The Tests that Should Be.

So far as the proposed War Office Competition is concerned, the writer has most naval and military men, as well as constructors, on his side when he asserts that the whole competition should be for "All-British" machines. No matter how hard the tests may be British constructors will rise to the occasion if they are assured of orders when they pass the tests, but obviously no one will go to the expense of competing if they are only going to get one cash prize and no orders.

There are, however, some few constructors who firmly believe French engines to be the best in the world, oblivious of the lessons of the motor trade. These constructors demand a competition for British aeroplanes, with liberty to use any engine they choose.

Now, it might, in a way, be wise to hold such a competition at the same time as an "All-British" competition, just to give our British engine makers a chance of showing what they can do; for, be it noted, although this year's Alexander engine prize of £1,000 is open to the world, no foreign engine maker has dared to face the 24 hours test at full power, and only British engines are left in competition.

Therefore it seems that the proper thing would be to hold two competitions, one for all-British machines, and one for British aeroplanes with foreign engines. Both competitions should be held at the same time and the conditions and tests should be identical. Also, the prizes should be identical, namely, orders for at least a dozen machines for the winner in each case, at a price of £1,000 each, and, say, orders for nine, and five machines to the second and third in each class, at the same price.

We should then have 52 really good British aeroplanes as a nucleus for the mounting of our Air Battalion, and further orders could be placed more or less on the recommendation of the officers of the Air Battalion, who would soon find which machines they liked best, for the actual winning machine might not be by any means the nicest to fly.

Not more than a year later a similar competition should be organised, so as to give a fair chance to new constructors, or to constructors who had failed the first time but had redesigned and improved their machines.

In this way the all-British machines would be assured of an equal chance of orders with the foreign-engined machines, and the aeroplane maker would be encouraged to enter a machine in each class, whereas, owing to the foolish anti-British-engine feeling so prevalent among those who are bad motor mechanics, several would fit nothing but foreign engines if they had to choose one or the other.

Also it would encourage the British engine makers to spend more money on perfecting their engines, and would enable them to give practical assistance to many a constructor who at the moment cannot afford to buy a big expensive engine on the off chance of winning some of the orders. For, be it remembered, the engine costs just about three times as much as the rest of the machine, and a man may build the finest aeroplane in the world and never fly it unless he can borrow an engine. Such men deserve, and, indeed, are entitled to help; for if they are starved out we may quite possibly lose the chance of getting the best aeroplane.

Let us therefore insist on the Competition being for British aeroplanes primarily, even if we have to give way on some points, but let us give the British engine maker an assurance that he also shall have some reward for all the money he would have to spend in preparations.

Incidentally it would be better still to have six different classes, namely, three divisions for 3 seaters, 2 seaters, and single seaters—as specified in the opening of this article—for each would need different tests for its different purposes; and each of these divisions would need to be sub-divided into all-British machines, and those with foreign engines. Even in this way we should only get 156 machines altogether, which would be none too many.

---

## The War Office Competition.

Apparently on the good sentimental British principle that a dead lion is better than a live dog, the daily papers of Thursday last devoted some pages each to the regretted political demise of Mr. Balfour and absolutely ignored Colonel Seely's reply to Mr. Joynson Hicks's question concerning the production of British aeroplanes for the Army. As a matter of fact, the only important papers in which the writer was able to find any reference to Colonel Seely's reply were the *Standard* and the *Telegraph*.

The *Morning Post*, which at one time posed as the aeronautic saviour of the British Empire, and persuaded a number of its readers to subscribe more or less large sums for the purchase of a French dirigible (which has only appeared once since its arrival in this country, and then incontinently burst), actually omitted the question and its answer from its Parliamentary Notes, while quoting several of less importance, in spite of the fact that the editor's attention had been particularly drawn to the subject the day before the answer was given. The *Times* also ignored both question and answer.

No doubt the invasion of this country by American motor cars is of vastly greater importance than the fact that we have no forces available for aerial defence, and so this overwhelming calamity has occupied the whole attention of Mr. Massie Buist, who at one time did quite a considerable amount of good work for aviation in the *Morning Post*.

However, the fact remains that, taking the lay press all round, they either do not know or do not care anything about the subject, as none of them has commented on it in any way.

Colonel Seely's reply absolutely confirms everything said in THE AEROPLANE last week, and it is evident that the Government, or rather those who misguide it, have at present made up their minds that the British manufacturer is not worthy of consideration. Apparently the policy now is to procure for the

Army Aircraft Factory models at a cost of some thousands of pounds.

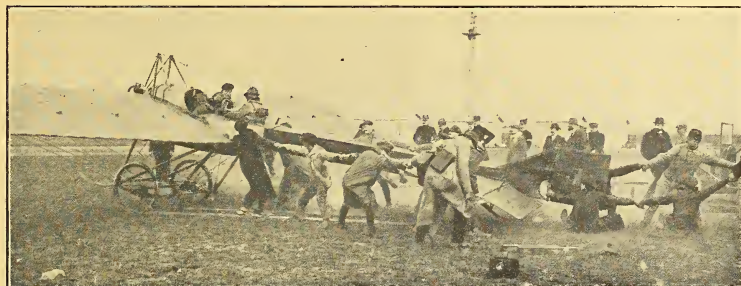
It may be estimated that the whole competition will cost the Government at the very least £5,000 in prizes, even doing it in the meanest possible manner, and yet it has apparently never occurred to the authorities that there are in this country, outside the Army Aircraft Factory, designers who can be bought for a matter of £500 a year, and who are capable of turning out finer machines than anything that has ever yet been seen in this country or any other, so that this precious competition, by which it is apparently hoped to save the nation the profits which would worthily accrue to the independent constructor, will actually cost the Government considerably more than if they bought the machines honestly and straightforwardly from the British manufacturer.

This is quite apart from the fact that it is acknowledged, even by Government servants themselves, that equipment turned out in a Government factory or dockyard always costs considerably more than the same equipment bought from a mere commercial manufacturer, and that in this case there is the added probability that, owing to the gross incompetence already displayed by the staff of the Army Aircraft Factory, the quality of the goods would be considerably lower than those turned out by a manufacturer.

Altogether the situation is thoroughly disgusting. In order to save the faces of a few men who have been pushed into their positions without giving any previous proof of their ability, public money is to be wasted in thousands, public safety is to be endangered, and the lives of our military aviators are to be risked, when, by the exercise of a little common sense, it would be possible to build up a financially sound industry, capable of turning out machines of the best type and construction to protect the country in time of war.



*The British-Built*  
**DEPERDUSSIN MONOPLANE**  
 2-3 SEATER MILITARY TYPE  
 With 80H.P. Anzani or 100H.P. Gnome  
 IS NOW BEING MANUFACTURED IN OUR  
**London Works.**



Védrines, on 80 h.p. Anzani-Deperdussin, starting for altitude in the Military Trials.

***Latest Success!—French Military Trials at Reims.***

The DEPERDUSSIN had two machines classified.

The DEPERDUSSIN gave the finest results.

The DEPERDUSSIN climbed to 1,600 feet in 9 minutes 2 seconds.

The DEPERDUSSIN got out of the ploughed field test with 40 yards run.

The DEPERDUSSIN did this with 675 lbs. dead weight, and 1,600 lbs. of machine.

The DEPERDUSSIN Aviation School at Brooklands.

The DEPERDUSSIN offers Special Terms to Navy and Army Officers.

The DEPERDUSSIN School has an adequate supply of machines for pupils.

The DEPERDUSSIN Two-Seater offers unrivalled advantages for passenger flights.

*For full particulars apply*

**The British Deperdussin Aeroplane Syndicate Ltd.,**

Wires:  
 MONODÉP, LONDON.

30, REGENT STREET, W.

Phone:  
 280, GERRARD.

## The Army Aircraft Factory's Record.

In consideration of the Government's intention to build military aeroplanes at the Army Aircraft Factory, it seems worth while to review briefly some of the things which have been done at that much-favoured place.

It is probably already well known that the Army airships *Beta* and *Gamma* were built there, and that these certainly did behave fairly well on calm days. It is also practically certain that the latest production, *Delta*, is a failure, in spite of the experience which should have been gained with the two previous machines. This seems to indicate a lack of ability to learn from experience.

The Clement-Bayard dirigible is also supposed to be in the care of the Army Aircraft Factory, and as it now has been in their possession for something like a year without making any appearance, it seems fair to assume that the factory acknowledges itself incapable of rebuilding that expensive machine so as to make a satisfactory job of it. This would certainly seem to indicate a lack of confidence in their own power, which does not altogether persuade one to believe in their capabilities as aeroplane constructors for the Army.

Their unfitness to undertake the motor side of aviation may, perhaps, be gauged by the fact that one of the best E.N.V. engines ever built was ruined a few days after it came into the possession of the factory through being put on a test bench and run to destruction at a speed of 1,500 r.p.m., though it was well known that it was only designed to run at 1,200 r.p.m.

The Howard-Wright biplane to which this engine belonged was also one of the best of its kind, and had flown many hundreds of miles at Brooklands with Lieut. H. E. Watkins as pilot. On arrival at the Balloon Factory it was relegated to a corner, where it remained in a state of indescribable neglect for some months, and was then taken down to Salisbury Plain, where one of the officers of the Air Battalion did his best to restore it to its original state of excellence, but, unfortunately, the machine was too far gone through neglect to be made really useful. Thus it appears that the "Factory" can neither appreciate nor care for a good machine when they get it.

The two aeroplanes built at the factory are probably already well known, the one, a remote copy of a Voisin *Canard*, being the tail-first monstrosity which killed Mr. Ridge, and the other a machine with the engine behind, which is no advance, for practical purposes, on the ordinary Farman, and these should effectually dispose of any claims the "Factory" may have to be considered seriously as designers or even as copiers.

The last point which might be considered is that of the general management of the concern. This can best be illustrated by the story of a very capable young mechanic who, some time ago, applied for a position as mechanist in the Air Battalion. The following is a diary of the performance:—

The test was to last for three weeks, but it lasted for five, and it started on a Friday morning at 7.45 a.m. The first test was to turn up and cut a thread on a one-inch bolt and nut, and to do the same on eight one-inch bolts  $\frac{1}{2}$  ins. diameter. He was warned to take his time for the work, and he finished this on the Tuesday, having taken four days.

The following day he was put on the fitting bench to file out two keyways in chain gear wheels, to make keys to fit the shaft, and to fit the chain wheels. He was then put on filing a dozen hexagon nuts and bolt heads. This "test" also took four days.

He was then sent into the motor section on the Monday morning, and reported himself at 7.45 a.m., but did not see the foreman of the shop till 12.30, and at 3 p.m. he was started on an exceedingly antiquated petrol motor to take off the cylinders and see whether the bearings were loose. He had the motor together again on the Wednesday at 12.30, and spent the afternoon looking for a tank. On the Thursday morning he employed himself carrying water in a bucket to the water tank

to cool the motor, and got the motor running at 3.30. From then till 5 p.m. he was endeavouring to discover the foreman.

On Friday he was employed walking up and down the shed to keep warm, as there was nothing for him to do. On Saturday he was at the same work, and on Monday and Tuesday he was away on leave. On Wednesday he helped to take the cylinders off the engine of the *Beta*. On Thursday he took down the fly wheel and the chain gear of the same engine. On Friday he again walked up and down the shed to keep warm. On Saturday he helped to assemble the *Beta*'s engine.

The following Monday he was working on the *Beta* until 1.30, and was then sent back to the old original petrol motor to have its revolutions taken. On Tuesday and Wednesday he was employed some time in running the said motor while a boy who had left school about six months before, and who happened to be a relative of one of the foremen of the "Factory," was put in charge of the arduous duty of taking the revolutions. This performance, which was called a "motor test," took 12½ days.

The following day (Thursday) he was put on what was supposed to be an electrical test. This consisted on Thursday, Friday, and Saturday in wiring up arc lamps. The following Monday—this still being the electrical test—he was set to work knocking holes in the wall of the new erecting shop and screwing on cleats to hold the lamps. On Tuesday and part of Wednesday he was still employed on the same highly technical job, and for the rest of Wednesday he was turned on to whitewash the walls, a branch of general knowledge which is, of course, essential to a motor engineer.

After this he was told to report himself to the foreman of the fitting shop. The said foreman was not aware of his coming, so had to make inquiries as to his right to be there. The foreman then asked whether, if he had not passed his tests, he was prepared to start as an ordinary fitter. The candidate said that he had no objection, if he could draw his regular fitter's wage of 36s. per week. The following morning he went to see the assistant superintendent of the "Factory," and asked whether he had passed his tests. He was told that he could not be accepted as a mechanist, as there were too many applicants for the job, but that he could be an ordinary fitter if he liked. He was also told that he had been reported as not knowing anything about electricity, and was asked if he could wire an ordinary motor magneto.

The candidate replied that he could, but that he would not stop for the 34s. a week which was now offered. He was then offered 9d. or 9½d. an hour, whichever the foreman liked to give him, but, not being satisfied with the way he had been treated, he finally refused to have anything to do with the place.

This is only one instance, and it is possible to find other candidates for jobs as mechanists in the Air Battalion who have been similarly dissatisfied with the way in which their alleged tests have been carried on at the Aircraft Factory. But these few examples should help in some degree to show the thorough unfitness of the place, as at present organised, for the production of army aeroplanes.

### The Army Grant to Officers.

The Editor learns that several officers who have taken their certificates and have applied for a refund of their £75, on the terms set forth in Colonel Seely's announcement in the Commons on November 8th, have been informed by the War Office that only selected officers will be attached to the Air Battalion, and that the £75 will only be returned to such officers. Unless Colonel Seely was misreported in several papers, his announcement made it quite clear that any officer who won his certificate should have the Government grant, and should be attached to the Air Battalion.



The Voisin "Canard" on shore leave.



# WINTER AVIATION

To pay your expenses during the winter months  
FLY AT

**Brighton - Shoreham**  
**Aerodrome** November, December,  
January and February.

Brighton Season in full swing.

Passengers plentiful at paying prices.

FREE NOTICE BOARD IN ALL HOTELS FOR USE OF TENANTS.

News circulated by Exchange Telegraph Co., who have an office on the ground.

**Maximum Sunshine.**

**Minimum Fog.**

STEADY SEA BREEZES.

NO GUSTS.

NUMEROUS DEAD CALMS.

Perfect Ground. Low Rents. Living Cheap. Large pleasure-loving population. Aviators are popular. Expert Engineers, Oils, &c., are available on the spot. Large water Surface available for Hydro-Aeroplanes.

Apply :—MANAGER—

Telephones :—67 Shoreham; 4642 X Brighton.

**Brighton-Shoreham Aerodrome, Shoreham, Sussex.**

# BLERIoT

The most successful in all the great Cross-Country Races of 1910 and 1911.

## TUITION

At the Bleriot School,

INCLUDING  
ALL EXPENSES.

**£75**

HENDON.

Including Third Party Insurance,  
and all breakages, if any.

IF THE PUPIL OBTAINS HIS PILOT CERTIFICATE WITHOUT  
BREAKAGES, A SUM OF £10 IS RETURNED TO HIM.

PLEASE ADDRESS ALL INQUIRIES TO :—

**L. BLERIOT, Belfast Chambers, 156, Regent St., London, W.**

Head Office for the British Empire.

Norbert Chereau, General Manager.



## AIR CURRENTS.

## Why is it?

When I am annoyed about anything I always write to a paper about it. If my letter is published I feel relieved, and if it isn't my annoyance is transferred to the paper. So there is no harm done either way.

I take an æsthetic delight in aeroplanes—I think that is the word. I used to go in for rabbits and dogs; now I go in for aeroplanes. This has got about, and the consequence is that if anybody's motor byke goes wrong, and a mutual friend hears of it, he consults me. Now I have rather a confused idea of motors, owing to somebody explaining a gas engine and a petrol motor to me on the same night after supper. Still, one can but do one's best. I always do so, and to that I probably owe the fact that nobody asks me twice. My reputation is dwindling. With regard to my brother-in-law's motor byke, for instance—but I digress. That is another story.

I went down to my brother-in-law's bungalow at Sandstead the other week-end, and, soon after a harmless and instructive little conversation about aviation had evolved, my sister (Agatha) amazed me by propounding this question:—

"But what really makes the aeroplane fly?"

I gathered she had not quite grasped the idea. One has to grasp the simplest ideas.

Now I fancy I am rather good at an explanation. Some people are not. Some people would have said, offhand, "The propeller"—and gone outside for a smoke.

"I'll put it in the simplest way," I said. "The resistance of the air—"

"The resistance of the air" (in a receptive tone).

I hate being interrupted.

"The plane," I said, "being upwardly inclined to the line of flight, the resistance of the air comes underneath it and in time lifts it."

"And the line of flight—?"

"The line of flight is an imaginary line along which the aeroplane flies."

"And in time it is lifted."

"By the resistance of the air."

"But," said Agatha, "what makes the air resist?"

I repeated the whole formula over again in a different way (I admit it is amateurish), placed it in different lights, viewed it in perspective, took a bird's-eye view of the question, and, so to speak, looked at it through a magnifying glass, gradually climbed to a sufficient altitude, and then *vol plané*, as it were, for news and began the whole exhibition over again. And then my brother-in-law happening to return, Agatha appealed for help on the ground that I was saying "the most impossible things."

My brother-in-law is a civil engineer—I never did understand the meaning of that term; he is distinctly uncivil sometimes—and undertook to explain the matter via Newton's "Laws of Motion." He did so.

Agatha's phases were:—

Law 1.—Respect,

Law 2.—Mystification,

Law 3.—Annihilation.

I was annihilated, too. And at the end of it Agatha said, "I see." I think the word for that phrase is—ambiguous. You will note she didn't say what she saw. I saw that I was right in not professing to know anything about Newton. He is all very well, no doubt, in his right place, but I don't think he saves accidents. I don't profess to be a lawyer, but I don't anticipate finding myself in the dock at the Old Bailey on that account. Quite the contrary. When I find an explanation too difficult I am always content to understand the thing it explains without it.

"It's my fault," it occurred to me a day or two afterwards; I ought to have put it to Agatha in this way: *What is it that keeps a kite in the air?* That would have been the first step—the first link in the chain. From thence the argument would have proceeded calmly and coldly to its logical conclusion.

I have never put it to her in that way, because I have heard she has been talking about poor — (that's me) getting quite excited and repeating and repeating the most absurd things, "when dear L— (my brother-in-law) came in and made it quite clear in a few words—"

When next I visit Agatha I shall propound to her the following question: "Why does a ball fall to the ground?" "Why

shouldn't it?" will not deter me; the mere stock phrase, "Law of Gravity," will not satisfy me; "Heavier than air" will only mystify me. I shall want to know—  
F. A. G.

## Replies of Budding Pilots.

(The following replies are selected from among those sent in for the recent competition. It should be noted that they are all quite serious.)

Question 1.—"If a bird had enough force behind it when gliding, it would keep going. An aeroplane is like a bird gliding, but it has an engine behind it to keep it going. It has also elevating tips, or wings, to let it rise or descend, but the bird uses its wings."

Question 2.—"The pitch of a propeller is that distance along which a propeller will move in one revolution, provided it is revolving *in vacuo*."

"If the blades were carried round in the they are set one turn, the length of travel would be the pitch."

"If any article is caused to rotate, it tries to stretch out. As the propeller is revolving very fast, it tries to 'pitch' itself out. This action is called the 'pitch of a propeller.'"

Question 3.—"Incorrect adjustments might be: (a) The control wires to the rudder or rudders may be of unequal length; (b) the unbalanced rotary force of the engine and propeller causing one side of the machine to tip up. This could be corrected by fitting two propellers turning in opposite directions."

"You are likely, in mistake, to put your foot on the left side. I should mark the knees, left and right, but I would do away with the bar."

"It would require to have some practical experience to answer this question."

Question 4.—"The reason for this phenomena would probably be the same as the last reason in No. 3, i.e., the propeller not being suitable for the machine."

Question 8.—"An abnormal engine speed."

"If the machine lifted very quickly and easily; if it flew well with the engine throttled down; or, when the engine were all out, it flew with the tail well up."

"It would be justifiable to fit a propeller of large pitch to an extra fast machine with a very powerful motor. For the aeroplane, while losing considerable thrust by slip, would, nevertheless, still be able to fly with what power there was remaining. This experiment would be adopted when testing a propeller of large pitch. For, of course, a small pitch propeller, running at high speed, would lose less by slip than a slow propeller of big pitch."

Question 9.—"Though I have no machine I can agree with anyone who overturns his machine before flight. Perhaps it has been raining and it might drip through, and might drop on a part of the machine or engine and rust it. Perhaps the propeller might get the edge blunt; and many a thing might happen while away."

Question 10.—"Unless the machine is banked at a corner the machine sideslips in the most awe-striking way."

Question 11.—"Because the inner wing tends to drag, and the resistance of the fuselage or the tail outrigger, therefore more power is required."

"In turning a corner an aeroplane is usually banked. This means that the outer wing is raised and the inner one lowered. Therefore it is advisable to raise the centre of gravity of the aeroplane, and this can only be done by increased power."

Question 12.—"(1) If you point the hour hand of your watch towards the sun, south will always be somewhere nearly opposite 12 o'clock. (2) There is always a small village near; each has usually a church, and some churches have weather cocks, from 'whom' you might get an approximation of direction. (3) By taking note of the direction of the wind and the clouds."

"Imagine yourself facing the sun, then the north is on your right and south left if after noonday, and *vice versa* if before noonday. A watch held in this position would give the approximate points of the compass."

"The first thing to do is to find a stream or river. By looking towards its source the left and right may be seen. From this the points of the compass might be recognised."

"One thing worth remembering is that the majority of English railways run from north to south; the only other means is by the sun, to find the position of the points of the compass."

THE

**GRAHAME-WHITE****FLYING SCHOOL,****The London Aerodrome, Hendon, N.W.***The finest equipped and most accessible Aerodrome in the United Kingdom.***CONSULT US—DON'T DELAY.**

TO HAVE BEEN TAUGHT IN OUR SCHOOL PLACES  
 THE HALL-MARK UPON YOUR FUTURE REPUTATION  
 AND ENSURES YOU CERTAIN SUCCESS.

*Among the many successful Pilots trained at our school are the following:—*

- |   |  |
|---|--|
| <b>J. ARMSTRONG DREXEL</b> (Leading Amateur).                                       | <b>CLEMENT H. GRESWELL</b> , Late Chief Pilot,<br>Grahame-White School (1st U. K. Aerial Postman). |
| <b>CHAS. HUBERT</b> , Pilot, Grahame-White School<br>(1st. U. K. Aerial Postman).   | <b>J. V. MARTIN</b> , Chief Pilot - Constructor, Queen<br>Aeroplane Co., New York, U.S.A.          |
| <b>LEWIS TURNER</b> , Chief Pilot, Kennedy Aviation<br>Co., St. Petersburg, Russia. | <b>W. RIDLEY-PRENTICE</b> , Manager, The Aero-<br>nautical Syndicate, Ltd., Hendon.                |
| <b>J. L. TRAVERS</b> Engineer-Pilot, Messrs Short Bros.,<br>Eastchurch.             | <b>E. F. DRIVER</b> , Pilot, The African Aviation Syndicate,<br>Ltd. (1st U. K. Aerial Postman).   |
| <b>NAVAL LIEUT. O. DAHLBECK</b> , Chief Pilot,<br>Swedish Navy.                     | <b>W. C. ENGLAND</b> , Managing Director, Burmah<br>Aeroplane Syndicate, Rangoon.                  |
| <b>MRS. C. DE BEAUVOIR STOCKS</b> (First Lady Pilot to carry a Lady Passenger).     |  |

Full particulars on application to

**THE GRAHAME - WHITE AVIATION CO., LTD.,**

PROPRIETORS OF

**THE LONDON AERODROME, HENDON, N.W.**Wires—"VOL PLANE" or "  
CLAUDIGRAM, LONDON"Phone -  
KINGSBURY 22.

### Can an Aeroplane be Certified?

As was seen from a report of the Royal Aero Club Committee which appeared recently, it is the intention of the delegates to the conference of the International Federation to support a scheme for examining and certifying aeroplanes. Without mincing matters, it may be stated that such an idea is both absurd and impracticable. In the first place, the plan is to make the examination compulsory. Now what manufacturer would be so blind to common sense as to submit to such an examination? In the first place, no-one in the world, still less on the Committee of the Royal Aero Club, is sufficiently omniscient on the subject of aeroplanes to be able to vouch with honesty and certainty for the soundness or proper design of any aeroplane. As well suggest submitting machines for the approval of the officials of the Army Aircraft Factory.

In the second place, even if a perfect examining committee could be found, it would not be policy to shift the responsibility from the maker to the Club, which, in its own sphere of sport, has plenty to keep it busy.

As a matter of fact, the support only emanates from the R.Ae.C. Committee. It does not in any way reflect the views of the members, and surely the Committee is acting *ultra vires* in taking such a step without consulting the members as a body. Having some inside knowledge, the writer does not hesitate to state that those members of the Committee who know least about aeroplanes are those who are most in favour of this absurd scheme. As a matter of fact, the members who would be most likely to be appointed to any "examining committee" are precisely those who would be promptly bowled out by a pertinent question from the constructor of the first aeroplane they had the impertinence to inspect.

If such an examination were optional, possibly a certificate bearing the high seal of the R.Ae.C. might be useful for advertising purposes, but that is about all it would be. It can be stated without fear of refutation that even if the whole world were drawn upon it would be impossible to form a committee of six men of sufficient knowledge, unimpeachable honesty, freedom from prejudice, and practical experience, to undertake the task which is lightly proposed by our would-be legislators. There is a proverb about "angels fearing to tread," which seems to bear on the case.

### The Royal Aero Club.

At the last committee meeting the following new members were elected: Wilhelm Clouth, Jean de Francia, Tom Garne, Bentfield Charles Hucks, and Stanley Skipworth.

The following aviators' certificates were granted: 152, Lieut. H. H. Harford (Bristol biplane, Brooklands); 153, Mrs. C. de Beauvoir Stocks (Farman biplane, Hendon); 154, Captain E. B. Loraine (Valkyrie monoplane, Hendon).

Royal Aero Club Special Certificate.—The Committee reconsidered the time-limit for the cross-country flight, and decided to increase this to five hours.

The full rules are as follows:—

#### ROYAL AERO CLUB SPECIAL CERTIFICATE.

(Under the rules of the Fédération Aéronautique Internationale.) The Royal Aero Club of the United Kingdom will grant a special certificate to aviators who have passed the following tests:—

1. (a) Candidates must hold the F.A.I. Aviators' Certificate, and be entered on the Competitors' Register of the Royal Aero Club.
- (b) The requirements are:—
  - (1) A cross-country flight, out and back round a point situated at least fifty miles from the start. The turning point will be selected by the Royal Aero Club, and will not be indicated to the candidate until one hour before the starting time selected by the candidate. This flight shall be completed within five hours of the selected starting time.
  - (2) A separate altitude flight of at least 1,000 ft. rise, which shall be verified by recording barograph, sealed by the observers prior to the start.
  - (3) To glide from a height of at least 500 ft. above the ground to earth, with engine completely cut off, and alight under normal conditions within 100 yds. from the starting point. This glide may, at the candidate's option, be the conclusion of Test 2.

A sealed barograph must be carried in all flights.

2. Each of the flights must be vouched for in writing by observers appointed by the Royal Aero Club. All tests to be under the control of, and in places agreed to by, the Royal Aero Club.

3. All flights must be made between sunrise and one hour after sunset, and suitable previous notice must be given to the Secretary of the Royal Aero Club.

4. Candidates must make application on a form provided for that purpose. Any expenses incurred must be borne by the candidates.

5. The Royal Aero Club will decide if the candidate has qualified for a certificate, but reserves the right to refuse the same or withdraw the same at any time without giving reasons.

6. The decision of the Royal Aero Club on all matters connected with the tests is final and without appeal.

7. The Royal Aero Club reserves itself the right to add to, amend, or omit any of these rules, should it think fit.

8. The Royal Aero Club declines all responsibility for any accidents, or any damage that may occur to the aviators, their machines, or to any third parties during or in connection with the qualifying tests of the candidate.

The competition for this year's British Empire Michelin Cup No. 1 and prize of £500 closed on October 31st, 1911. Mr. S. F. Cody was the only competitor who succeeded in accomplishing the minimum distance of 250 miles, as laid down in the rules, and the Committee, after examining the observers' reports and certificates relating to the aeroplane, unanimously awarded the prize of £500 and trophy, kindly offered by the Michelin Tyre Company, to Mr. S. F. Cody. The flight was made at Laffan's Plain round a circuit of about seven and a-half miles. Mr. Cody started at 8.3 a.m., and finished at 1.18 p.m., the distance being 261 miles 810 yds.

The following are the specifications relating to the all-British aeroplane used by Mr. S. F. Cody:—

Couy biplane.—Motor, 60 h.p. Green; carburettor, Zenith; magneto, British Bosch; sparking-plugs, Pyramid; fabric, Pegamoid; propeller, British Chauvière.

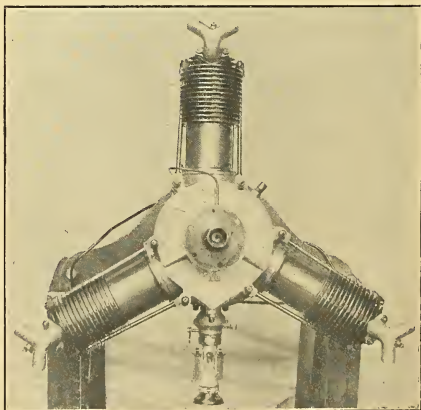
British Empire Michelin Cup No. 1.—1909, winner, J. T. C. Moore-Brabazon (distance, nineteen miles); 1910, winner, S. F. Cody (distance, 185 miles 787 yds.); 1911, winner, S. F. Cody (distance, 261 miles 810 yds.).

British Empire Michelin Cup No. 2.—1911, winner, S. F. Cody. 125 mile circuit. Time, 3 hrs. 6½ mins.

Circuit of Britain.—Mr. S. F. Cody has been presented with a cheque for £40, being the prize offered in connection with the Circuit, for the first all-British aeroplane to arrive at the Newcastle Control. The donors of the prize are: The Hon. Sir Chas. A. Parsons, K.C.B., Major J. F. Laycock, D.S.O., the Northumberland and Durham Aero Club, and the North-Eastern Syndicate, Ltd.

Annual Dinner.—The annual dinner of the Royal Aero Club will take place on Thursday, December 14th, 1911, and members will be receiving within the next few days a circular giving all particulars. At this dinner the prizes recently awarded will be presented to the successful competitors.

—HAROLD E. PERRIN, Sec.



The Anzani Y type motor.—35-40 h.p. at 116 lbs.



## The Week's Work.

**Sunday, November 5th, and Monday, November 6th.**

No flying anywhere. Hurricane blowing all day and night.

**Tuesday, November 7th.**

**BROOKLANDS.**—Bell on Deperdussin two-seater out with Mr. Chessman as passenger, and, later, also out 35 h.p. racer for circuits. Bertie Rippen out trying Hanriot, but weather too bad for pupils.

**HENDON.**—All Blériot pupils out, Slack flying six circuits and finishing with *vol plané*, followed by Parr, who made also several flights. Tremlett, Pressnell, and Sacchi improving greatly in straight flights, and beginning to learn how to make figures of eight. Busk, new Valkyrie pupil, received first instruction in controls.

**THE PLAIN.**—Busteed and Jullerot made two trials on Bristols Nos. 7 and 43, testing engines and weather. Former flying perfectly, but wind much too strong for school work. By evening wind blowing a hurricane.

**Wednesday, November 8th.**

**BROOKLANDS.**—Bristols out early and late. Fleming and Pizey both out with both new pupils, Capt. Gordon, R.M.L.I., and Mr. Warren. In evening Capt. Harrison doing circuits in good style. Then Capt. Allen, after couple of circuits almost in dark, mistook smoke of Humber engine for the ground and tried to land 20 ft. up. Discovered mistake and switched on, but by time he had got hold of machine was out over banking of track. Therefore continued over rough ground towards Byfleet, did a sharp banked turn to avoid running into trees, came round into track again, landing a shade roughly with puffy wind behind, but without damage. A nice performance for a novice.

In morning, Bell, on 35 h.p. racing Deperdussin, up at 1,000 ft., finishing with spiral *vol plané*, or, rather, a *vol piqué*, which is necessary on a high-speed monoplane. Then Chattaway and Garne both out on same machine, and enthusiastic over its speed and handiness.

**HENDON.**—Fine day. All Blériot pupils repeating their flights of previous day, and doing well.

Lieut. Parke, R.N., on "American" Farman, descended after four circuits, as wind was gustier than anticipated, and blowing 25 m.p.h. Later out again, and, after three circuits, took up P. K. Turner, of THE AEROPLANE, for four circuits. Then solus for half an hour at 1,500 ft., doing quick turns and descending in splendid spiral *vol plané*. Fowler, then as passenger, had quarter-hour's flight, with hand on lever, to get used to control. Another solo by Lieut. Parke concluded work, then getting too dark to make landings pleasant.

**THE PLAIN.**—No flying was possible in the morning. Fresh breeze in evening, and after Busteed, Bristol instructor, made trial, he took Lieut. Freeman for tuition flight. Dacre performed very creditable solo at height of 800 ft., and landing afterwards with clever *vol plané*. Jullerot also took Lieut. Freeman for two long circuits, and McIlsh then passed second part of certificate tests in good style.



Mr. Driver, the new Blériot crack, from South Africa.

**Thursday, November 9th.**

**BROOKLANDS.**—Bristol School at work in morning. Capt. Gordon and Warren up with Pizey and Fleming alternately. Capt. Allen did two excellent figures of eight. Then went for certificate, but, after three and a-half circuits, suffered from Gnome troubles and came down, wind stopping further attempt. Capt. Harrison did second half of brevet test, rising to 500 ft.

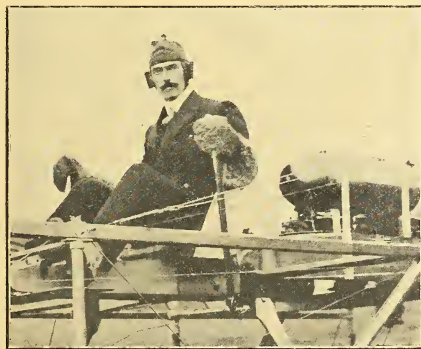
Kemp out on Flanders with new Green engine going well. Snowden-Smith flying on racing biplane. Lieut. Hewlett, R.N., took certificate after only seven times alone on machine. Excellent work, and a credit to Mrs. Hewlett, the first British aviatrix. Anderson out on Birdling biplane. Young and Noel in evening testing little Avro with 35 h.p. Green.

**HENDON.**—Lieut. Parke, R.N., started at 11 a.m. on "Birmingham" Farman for couple of circuits, but descended owing to blocked petrol pipe. At noon again up for three circuits and again landed. Quarter of an hour later started fine flight, staying at 1,200 ft. for half an hour and finishing in spiral. T. O. M. Sopwith then took over machine, flying beautifully for three circuits. Fowler up as passenger, with Lieut. Parke as pilot, for fifteen minutes, Fowler again in control of the lever. After lunch Lieut. Parke up at 800 ft. for twenty minutes; his descent en *vol plané* was magnificent. Mr. Gates, manager of aerodrome, next passenger, followed by new pupil, who received his *baptême de l'air*. Wind now steady to 8 m.p.h., so flying, from Mr. Parke's point of view, became rather tame. However, he had one more spin on "Birmingham" machine, and then took over the E.N.V. School 'bus as she emerged from shops. After solo he took up Gates, and then latter mounted 'bus and commenced rolling. Meanwhile Parke took up Raphaite on Gnome-Farman, afterwards handing over to Mrs. Stocks, who loses none of her enthusiasm since her certificate was gained. She gave pretty flight at 400 ft. Gates had meanwhile handed over 'bus to Raphaite, who rolled till dark.

Barber was out in afternoon on *Valkyrie II.*, and made several fine flights. Capt. Loraine then up on No. 10 for several circuits, finishing with fine *vol plané*. Busk then began with good rolling practice. Later Barber again on No. 11, but fog prevented any great height being attained.

**THE PLAIN.**—Pixton on school Bristol first up, making trial, after which he took Lieut. Freeman for tuition, this pupil being also taken by Jullerot and Busteed. Each instructor gave him charge of controls, as well as switching off and on to see if he was prepared in such cases. Lieut. Freeman showed excellent knowledge of subject, and also signs of making very good flyer. Dacre, another pupil, made three successive solo flights, each performing with remarkable skill, reaching good heights, making figures of eight, with sharp banking, and landing with good *vol planés*. This pupil has made very rapid progress during short time he has been at school, showing great aptitude for flying. Jullerot finished excellent morning's work taking Dacre as passenger to 800 ft., and describing figure of eight en *vol plané*.

Busteed made trial at 2,30, but wind bad for school work. Busteed again up at four, and then took Lieut. Ashton for tuition, afterwards taking up Lieut. Freeman, Busteed letting



Captain Loraine, on his *Valkyrie*; the first pilot to take his certificate on a 60 m.p.h. monoplane. He gives promise of being one of our finest military aviators.



Mr. Frank Ballard, the second "Spencer" pilot

both pupils take charge of machine. Pixton also took Lieut. Ashton, and pupil again had charge of machine. Jullerot took Lieuts. Freeman and Ashton for circuits, and Dacre made two solos, during which he described several figures of eight very cleverly. Lieut. Freeman has picked up preliminaries exceptionally well during two days he has been at school.

**HUNTINGDON.**—W. B. R. Moorhouse out on racing Blériot for two hours' cross-country flight to St. Ives at altitude of 4,000 ft. Bruce on school Blériot doing straight flights at 50 ft.

#### Friday, November 10th.

**BROOKLANDS.**—Bell, of Deperdussin School, doing circuits on 35 h.p. racer. Garne and Chattaway on same. New taxi with 28 h.p. Anzani arrived to-day, making five machines for school; most at any monoplane school in England.

At Bristol School, Capt. Gordon and Warren up training with Pizey, and, later, Pizey up with Mr. G. E. Neshall as passenger.

At Avro School, Raynham, Noel, Sippe, Setti, and Young all out doing circuits or straights with 35 h.p. Green. Eric Pashley on Humber for first time, and then Cecil Pashley up to 1,000 ft. on same machine, flying splendidly. Anderson on Birdling biplane going well. Kemp on Flanders getting machine into good form. Sopwith trying Howard-Wright biplane with 60-80 h.p. Green with plenty of power in hand. In morning, Rippen, after flying well on Hanriot, landed, and when running along ground, to quote an eyewitness, "machine put its foot in a rabbit-hole and turned a somersault." Probably skid caught a hummock and stuck in. Anyhow, Rippen was projected some distance from machine and badly shaken up and bruised without being actually injured. All wish him a speedy return to work; for, though very quiet and retiring, he is universally liked.

**HENDON.**—Slack, on Blériot, passed with great success three trials for pilot's certificate. Parr making figures of eight, but did not wish to try for brevet that day. Potet, Welburn, Desoutter (who is a very promising pupil), Tremlett, and Sacchi also out on Blériot school machines.

Morris, of Chanter School, doing farewell straight-line flights, this the only flying done by Chanter School, all having been hard at work dismantling machines and packing up preparatory to their exodus to Brighton-Shoreham on Monday.

Splendid day for school work. Slight mist, but practically calm all day, and school work continued till 4 p.m., when rain began. Fowler, Raphaite, and Liles out all day on the E.N.V.-Farman. Gates attempted straight flights for first time, having had only three rolling lessons previously. Time after time he flew length of ground, flying steadily and landing excellently. Given practice, he should be first pupil of present batch to gain brevet. Fowler, Liles, and Raphaite rolling, each having full hour's practice during day.

At 7 a.m. Barber put up fine exhibition on *Valkyrie II.* for half an hour, then descended to give passenger flights to Captain Loraine and Busk. Meantime Chambers out on school *Valkyrie*, making three circuits in excellent style and landing perfectly. Capt. Loraine then made two fine flights on the *Valkyrie* racer, his sharp turns and steep *vol planés* being very excellent. Busk out rolling. Later, Ridley-Prentice on school *Valkyrie* at several hundred feet for six circuits, fine *vol plané* terminating flight. Before lunch Busk got very good control of machine, and made some good straight flights. Wind increased in afternoon, but Capt. Loraine made short flight in fresh breeze, only to be driven down by rainstorm.

**THE PLAIN.**—Outdoor work impossible on account of wind, but useful work done in Bristol sheds.

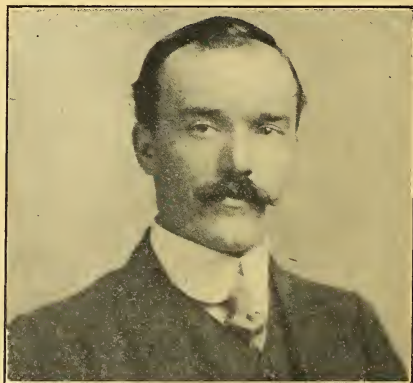
#### Saturday, November 11th.

**BROOKLANDS.**—Bristols distinguished themselves by getting second brevet in the week, Capt. Allen passing in excellent style, doing his figures of eight at 250 ft. He and Capt. Harrison have both the right temperament for flying, and should be valuable additions to the Air Battalion if that long-suffering corps is expanded as it should be. Perfect, but very cold, morning, so Fleming took school machine up to 2,000 ft. and came down with a spiral glide, making two full circles in doing so. Later, up with Captain Gordon and Warren, both in charge of control.

Deperdussin busy, as usual. Bell, on 35 h.p. racer up at 1,000 ft. when carburettor froze, so came down with engine shut off. Wrapped carburettor in odd woollen garments and handed over to Chattaway, who made good circuits. Bell then brought out brevet machine with 28 h.p. Anzani, for first time since Garne's "discontinuation," and took it up to 800 ft. Machine flew at once without any adjustments, showing accuracy of repair work in Deperdussin sheds. Baldwin and Sabelli then rolling on same machine.

Avro aviators out on 35 h.p. Avro, Raynham doing eights, Setti, Sippe, and Young straights. Anderson practising on Birdling biplane. Snowden-Smith on biplane racer, and Grahame-Wood on the Blondeau-Hewlett School biplane.

Cecil Pashley, on Humber, had comprehensive smash with extraordinarily little damage. After flying well, cut off engine at 25 ft., when machine dived suddenly. Lower cross-bar of chassis hit ground instead of wheels, and machine turned clean upside-down. Pashley, instead of jumping out, cleverly got down inside fuselage, where he was trapped till machine was lifted, and escaped without a scratch. Neither wing damaged, nor fuselage. Cabane flattened and propeller broken, also upper and lower cross-bars, but none of metal parts of chassis even bent. One radiator dented, but not burst, and engine and tanks untouched. Queer accident altogether. Probably caused by centre of thrust being too low, owing to engine being low down in frame. In consequence, big lift



Mr. Slack, the eleventh consecutive pupil of the Blériot School at Hendon to pass his brevet without any bill for breakages.



necessary on tail to make machine fly level. When thrust stops machine dives until elevator removes lift on tail.

Martin-Handasyde, Percival, and Walton-Edwards sheds all busy on their machines, which should be out before long. *Vickers II.* out testing for propeller pull, now thoroughly repaired after Fisher-Johnston smash. *Ducrocq-Viale-Avro* also nearly ready for trials.

HENDON.—All Blériot pupils practising, and Allen, showing very great progress, making beautiful straight flights several times during day. Slack is the eleventh Blériot pupil who has passed for his certificate without a breakage.

Thick fog till 10 a.m., when Barber flew on *Valkyrie 10*, making long excursion over surrounding neighbourhood and landing with a fine spiral *vol plané*. At the same time Ridley-Prentice flew school *Valkyrie* machine several circuits, and then handed over to Chambers, who put up fine flight, doing very small circles and handling machine with great confidence. Barber was flying on Nos. 10 and 11 alternately all morning. At 11 a.m. Chambers out again flying splendidly for fifteen minutes, making many sharp turns and frequent *vols planés*. Ridley-Prentice then up for long flight on school *Valkyrie*, and, after flying round outskirts of aerodrome for twenty minutes, descended with a long glide. Barber then gave lengthy passenger flight to Mr. Orde. Chambers again took control of school machine, and, rising to 150 ft., made fine figure of eight, and followed with many small left-hand circles, eventually landing faultlessly *en vol plané*. Barber then took up Ridley-Prentice as passenger for several circuits, machine lifting its 12 st. passenger magnificently. After lunch Chambers practising again, landings being very fine, and should secure brevet as soon as weather permits. Barber then up with Mrs. C. de Beauvoir Stocks, who recently won her certificate, for long flight, though great height was impossible owing to fog. On descending, Mrs. Stocks, whose brilliant flights on a Farman have attracted great notice, expressed herself delighted with great speed and stability of *Valkyrie* racer. Chambers able to get in another fine flight of fifteen minutes' duration till stopped by rain.

HUNTINGDON.—Moorhouse, testing new Radley and Moorhouse tandem two-seater, flew straight away with passenger 11 st. 6 lbs., afterwards taking up six passengers in all. Attained altitude of 1,000 ft. cross country, well out all round aerodrome. Mr. Duigan now arrived with his new type *Avro* biplane, and busy erecting it; expects to be out this week. Plenty of room for fresh pupils and tenants.

BARRHEAD.—In spite of high winds considerable indoor and outdoor work has been got through during past week. Capt. Forsyth and Lieut. Warrand, two pupils appointed by the War Office, have done straight flights, and should be in circuit stage this week. Clineskill has given up monoplane, and will go for brevet on biplane. Mrs. M. Lucking, of Tattenhall, Chester, has joined the school, and is thus the first pupil aviatrix in Scotland. Constructional work on three new machines is being pushed on, assisted by the pupils, who should thus gain great deal of practical knowledge. Specially attractive offer is being made to naval and military officers, particulars of which can be had on application to Scottish Aviation Co., Barrhead, Glasgow.

#### Sunday, November 12th

No flying anywhere, owing to tempest.

#### The Death of Professor Montgomery.

Many readers of THE AEROPLANE will remember the name of Professor J. J. Montgomery, the wealthy American inventor, who was also a member of the governing body of the University of Santa Clara, California. He it was who, long before the Wrights started their experiments, made a tandem glider in which the wings were warped as in modern machines, and had a universally joined cruciform tail and rudder, like that used on the *Demoiselle* and *Avis*. Although fifty years of age, Professor Montgomery continued, personally, to make experiments with his gliders, and on October 31st was gliding at Santa Clara, when, at a height of 40 ft., the machine got out of control and Professor Montgomery fell on his head. It was found he had sustained a compound fracture of the base of the skull, and he died an hour and a half later at his home in Santa Clara, whither he was taken in a car. Aviation has suffered a great loss by his death.

#### The American Aero Show.

Mr. G. F. Campbell Wood, Secretary of the Aero Club of America, suggests that if any British manufacturers are looking for new fields the New York Show, which is to be held shortly, is a good opportunity, for the following reasons:—

First.—Everyone who has any interest in the game will be there.

Second.—The promoters will not ask anyone to sign contracts in which the exhibitor is not guaranteed against action from the Wrights through the fact of his exhibiting.

Third.—A special Act of Congress (U.S. Commons) just passed entitles all exhibits for this exhibition to come in duty free.

Fourth.—The promoters expect to be able to obtain very low freight and cartage rates for exhibitors.

Fifth.—The price of floor spacing will be more European than American, as it is realised that, with the first shows, it is from the people who come to see the Exhibition rather than from the exhibitors that an income should be expected.

Lastly.—The promoters have the backing of every department of the Government and the use of the new Grand Central Palace, just built for such purposes.

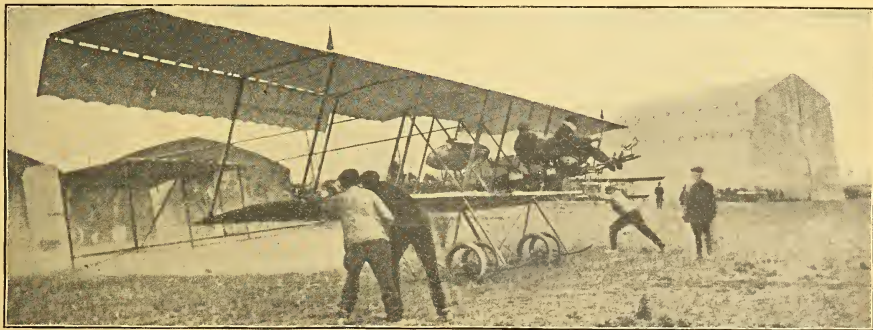
Although the business end of the show is not being run by the Aero Club of America, and the club is not assuming any financial responsibility in the matter, the whole thing is being conducted under the club's name, and it has got to be on the proper scale.

Manufacturers who would consider the question of exhibiting are requested to write THE AEROPLANE, 166, Piccadilly, W., where they can be put in touch with Mr. Campbell Wood, who expects to be visiting this country shortly.

#### The Aerial Post Results.

Though the actual balance sheet of the "Aerial Post" has not been published at the moment of writing, and so it is not known how much has been charged by the promoters for expenses, it is, however, announced that a cheque for £500 has been sent to Mr. Charles Hubert as a solatium for his broken legs. True, the amount is little enough, but it ought to see him through his hospital expenses and allow him a little holiday afterwards till he is thoroughly well again.

It will be remembered that this gift is primarily due to the firm attitude taken up by Mr. Gustav Hamel, who refused to carry the remaining mailbags left over after he had completed



The "decalsé" Farman about to start at Reims. Note the position of the pilot on the projecting ladder



his own contract unless the promoters undertook to hand over £500 to Mr. Hubert, and the writer is glad to note that the agitation in support of Mr. Hamel's action which was started in *THE AEROPLANE* has had its effect.

The Mayor of Windsor announces that a substantial sum is to be handed to him for the King Edward VII. Hospital at Windsor, but the amount was not known at the time of writing. The public would, no doubt, still like to have an exact account of the receipts and expenditure.

#### An Excellent Training.

The following interesting scheme for apprentices is in successful operation at the establishment of the Aeronautical Syndicate, Ltd., at Hendon.

It is intended to develop it into a first-class school of aeronautical engineering, and, being the first in the field and under such proved management, it may be expected to become an important factor in turning out really well-trained mechanics and designers, for whom, if really skilled, there already exists an excellent field, and one that is bound to increase rapidly.

Such a school, run on practical and systematic lines, should also prove of the greatest value to pilots, among whom there is a crying need for both practical and technical knowledge.

The A.S.L. is particularly well situated in possessing in its technical adviser Mr. H. Barber, the well-known aeronautical expert, whose work is distinguished for its originality and excellent constructional details.

The notice issued to apprentices reads thus:—

"A discussion *re* aeroplane construction will be held once a week, and it is required that every apprentice shall keep a notebook, in which he may during the week jot down questions upon points he desires information, such questions to be put at the weekly meeting.

"An examination will be held at the expiration of every three calendar months, for which a maximum of 100 marks may be secured.

"A deduction of one or more marks will be made for every reported instance of unpunctuality, disobedience, or forgetfulness of orders, lack of industry, or such like.

"The apprentice securing the highest number of marks for the three months will receive a prize of £5. The apprentice securing the next highest number of marks will receive a prize of £2.

"The first three-monthly term will commence as from November 21st, 1911."

#### Captain Clayton at Work.

Captain Clayton, of Mansfield, who was, during the summer, practising at the Hendon Aerodrome, has now been granted the use of a large tract of land by the Duke of Portland, and says that he can get a circuit of nearly ten miles if required, practically without trees. He has built a shed which will hold three machines, and considers that altogether he has got one of the best flying grounds in this country. The machine he is using is of the Blériot type, and every portion of it was built in his own workshop by himself and a mechanic. The engine used is a 50 h.p. Alivaston, with which Captain Clayton is extremely pleased. It gives a pull of just on 400 lbs. on a Blackburn propeller. Its weight is 160 lbs., and it only requires  $1\frac{1}{2}$  gallons of water for cooling. The radiators were made by Captain Clayton himself, and are placed on the side of the fuselage, under the wings. The machine flies at about 55 to 60 miles per hour.

#### Reconnaissance by Aeroplane.

The French Government have authorised Lieuts. de Montjou and de Goy to make a tour of observation along the Eastern Frontier. They will start from the military aerodrome at Etampes and fly to Sedan. Thence along the frontier, landing at Verdun to inspect the battlefield, and on to Toul. From Toul they will fly on over Nancy, Lunéville, and Epinal, even-

tually finishing their tour at Belfort. What joy this will bring to the heart of Germany!

#### A British-built Deperdussin.

In view of the remarks in *THE AEROPLANE* last week concerning foreign machines, it is interesting to learn that the British Deperdussin Syndicate had already at that date commenced the construction of a British-built Deperdussin, and works had been taken at Mildmay Avenue, Stoke Newington, where, by now, a three-seater Deperdussin, of the type which has performed so satisfactorily in the French trials, is already well under way. The machine is, of course, being built exactly to the French designs, but that is in no way to its discredit, for it is being built by British workmen with British capital, and can, therefore, claim to be a British machine, albeit the engine at the moment is French. Messrs. Porte and Santoni are to be congratulated on taking this bold step, and it is a very great satisfaction to be able to welcome them among the ranks of British manufacturers.

#### A New Naval Pilot.

Lieut. Hewlett, R.N., who took his ticket at Brooklands on November 9th, probably creates a record for pilots, being certainly the only pilot-aviator who has obtained most of his instruction from his mother, for Mrs. Hewlett, besides being quite a good pilot herself, has considerably more knowledge of what one may call the practical theory of aviation than the majority of male pilots. Mr. Hewlett only had two passenger flights with M. Blondeau, and was only able to take the machine out on seven occasions for practice flights, on account of the execrable weather; nevertheless, he is quite a good flyer, and has a more than usually good knowledge of the care and tuning of an aeroplane. He passed for his certificate on the very last day of his leave, prior to joining the *Inflexible*.

#### A Lecture at Ipswich.

Readers of *THE AEROPLANE* in East Anglia will be interested to hear that Mr. R. P. Grimmer, the well-known expert in models, will deliver a lecture to the Ipswich Engineers' Society at the Museum, High Street, on the 16th inst., at 8 p.m. His subject matter will be aviation and the aero model, and a practical demonstration of models will be given by Mr. R. F. Mann. The lecture will be illustrated with lantern slides, and will include remarks on the uses of aviation, the public attitude, the aero model and the full-sized aeroplane, experiences of model flying and experiences of flights on full-sized machines.

#### Lectures in Manchester.

On November 8th the members of the Manchester Y.M.C.A. were treated to a splendid lecture by Miss Gertrude Bacon. Needless to say, the lecture was largely attended.

In her opening words Miss Bacon explained how the first balloon, the Montgolfier, was not really invented by Montgolfier himself, but by his housekeeper. After giving a brief history of balloons, Miss Bacon showed some lantern slides of London as it looks from a balloon, taken by herself, including pictures of a cricket match and a motor race at the Crystal Palace. She then passed on to dirigibles, explaining the efforts of man to steer balloons. She also described her experiences as a passenger in the Spencer dirigible at Shrewsbury. Passing on to aeroplanes, Miss Bacon explained that the heavier than air machine was originally the outcome of British brains; also that the first man to leave the ground in an heavier than air power-driven machine was Sir George Cayley's coachman. After this Miss Bacon proceeded to give an account of her experiences as a passenger in various types of aeroplanes. After lucidly describing how an aeroplane flies, some very interesting cinematograph pictures were then shown. Altogether it was a splendid lecture, and, although non-technical, it was exceedingly interesting, and the Manchester audience will look forward to hearing Miss Bacon again.

C. R. TAYLOR.



Captain Clayton, of Mansfield, on his Blériot-pattern monoplane, with Alivaston engine, flying at his new aerodrome.

# BLACKBURN

## MONOPLANES & PROPELLERS

For Durability, Stability and Efficiency  
**TUITION.**

Write for prices and particulars to—

**The BLACKBURN AEROPLANE Co.,**

Phone: 2822 Central. **BALM ROAD, LEEDS.** Telegrams: "Propellers, Leeds"



No. 716. Size: 7 1/2 x 4 1/2 x 2 in.  
10/6 of all Chemists

### Be Prepared for Accidents

#### 'Tabloid' First-Aid

(Trade Mark) BRAND

Extremely portable outfits of timely bandages, dressings, restoratives, etc., for Aviators. From pocket-cases to aerodrome equipments.

**BURROUGHS WELLCOME & CO., LONDON**

There is no propeller beats the AEROSPEED. We are the makers,  
Then send to

**E. MELCOMBE, HARPENDEN, For all accessories.**

Large stock of wood, free from defects, knots, etc.  
Hickory & Silver Spruce, up to 3/4 in. 24ft. 1/0  
American Ash, Poplar, and Birch, 48 ft., 1/0  
**ELASTIC Stamp for Catalogue**

7 1/2 sq. 1 1/4d. per yd. or 11d. per dozen yards  
3/4 strip (about) 1d. per yard, 10d. per dozen yards.  
1 1/2 " 1 1/4d. " 1/3 " " "  
3/4 x 3/8 strip, 2 1/2d. per yard, 1/10 " " "

**PARCELS MADE UP FROM 2/6 TO £1 1s. 0d.**

## LAST FEW DAYS

OF SPECIAL OFFER OF

# TWELVE 35 H.P. GREEN

(PASSENGER CARRYING)

## 'Avro' Biplanes

OR MONOPLANES

AT

# £400

each complete.

Usual Price **£600.**

SEE LAST WEEK'S ISSUE FOR  
FULL DETAILS OR WRITE

## A. V. ROE & Co.,

The Aviators' Storehouse,  
**BROWNSFIELD MILLS,  
MANCHESTER.**

Telegrams—TRIPLANE.

Telephone—698 CENTRAL.

## Special Offer

TO

## NAVY & ARMY OFFICERS

**TUITION** on Monoplane or Biplane  
till Brevêt is obtained, including  
insurance against breakage and third  
party risks at

**REDUCED RATES.**

**NOTE** :—A particularly attractive  
offer will be made to the first ten  
officers enrolling under these new rates.

Aerodrome **BARRHEAD**, 4 miles from Glasgow.

Write at once—

**SCOTTISH AVIATION CO.,**  
185, Hope St., Glasgow.

## MICHELIN £500 TROPHY. WON ON A

The Green Engine, always to the fore when records are to be made, has again proved its undoubted superiority. Cody—using his new type machine fitted with a 50-60 h.p Green Engine—flew 261 miles 800 yards and thus secured this blue ribbon of the air. YOU cannot do better than to follow the lead of the pioneers.

Write for particulars to

**The Green Engine Co.,** Sole Licences under Green's Motor Patents Syndicate Ltd.,  
55, Berners Street, London, W.

Makers for the Patentees: THE ASTER ENGINEERING Co., Ltd.

# GREEN ALL-BRITISH AERO ENGINE

See H.C.



## A New Radial Engine Fixing.

The fitting of the 40 h.p. five-cylinder Viale engine by Mr. Maurice Ducrocq in the Avro biplane with which he is now experimenting has necessitated some alteration in the front part of the fuselage as originally constructed to receive a four-cylinder vertical engine. Without a special cradle or frame, the radial type of engine is by no means an easy affair to fit into the nose of a fuselage otherwise designed for a somewhat long and narrow type of engine, and great credit is due to Mr. Ducrocq for the neat way he has carried out the necessary alterations.

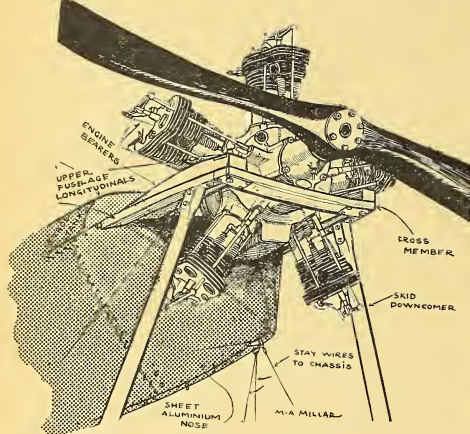


FIG. I.—FRONT VIEW.

Referring to Fig. I., it will be noticed that the lower portion of the front part of the fuselage (excluding the upper fuselage longitudinals and engine bearers) has been cut away to make room for the two lower cylinders of the engine. The aluminium sheet nose, as it stands, now resembles the bow of a warship in the respect that, instead of the "stem" sloping forwards, it now recedes backwards, considerably help-

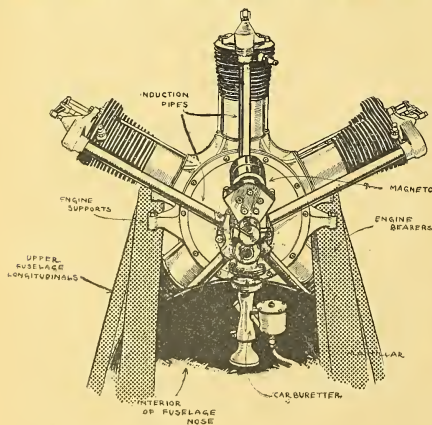


FIG. II.—BACK VIEW.

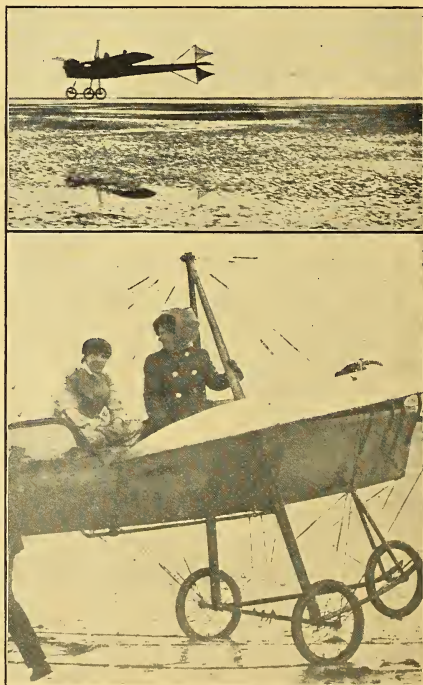
ing, by its shape, the flow of air around the lower cylinders of the engine. The engine bearers, which are of ash, are massive, and are fixed at their front extremities to the joints of the upper fuselage longitudinals and cross member in front of engine with long bolts and steel clamp plates, as shown in Fig. I. The rear ends of the bearers are bolted in a similar fashion to a cross strut farther back in the fuselage.

The front skid struts are left in their original position, and take a considerable amount of the dead weight of the engine. They are fixed to the under side of the upper fuselage longitudinals by the usual Avro method with steel plate fixings.

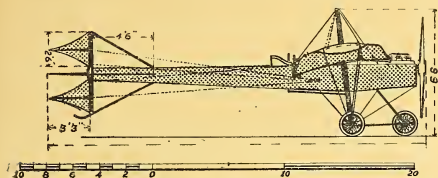
Referring to Fig. II., it will be seen that the carburettor is placed in the interior of the nose of the fuselage. This keeps the carburettor warm and protects it from oil and dirt, whilst at the same time it is readily accessible. Above it, mounted on a small platform, is the Bosch magneto, held in position by a steel band and tightening bolt. A large capacity streamline form petrol and oil tank, mounted a short distance astern of the engine on the fuselage, helps to give the whole front of fuselage, engine included, a decidedly neat and clean appearance.—M. A. M.

### A Fatal Fall in Austria.

An aviator named Schirnunek was recently killed at Pilsen by a fall from 600 feet. No particulars can be obtained further than that his machine suddenly began to sway and then dived straight downwards, Schirnunek being instantly killed. The authorities are holding an inquiry on the spot, when possibly more will be learnt as to the causes of the accident.



The Ferguson Monoplane, carrying a lady passenger, at Newtownards. Above, about to land. Below, after landing.



### Ferguson Monoplane

Surface of Main Planes	180 sq ft
Empennage	26
Elevator	11
Rudders	9
Weight (without Pilot)	750 lbs
Speed	55 m.p.h.
Engine	J.A.P. 35 H.P. 1,600 c.p.m.
Propeller	7'0" diam x 4'4" pitch.

### The Ferguson Monoplane.

The Ferguson monoplane has not as yet been seen in this country, nevertheless it is worthy of considerable attention. It was constructed under difficulties, its hangarage throughout the past year has consisted of a small tarpaulin over the engine, its only aerodrome has been a twenty-acre mud-flat, and it carries a pilot and 12 st. passenger at 55 miles per hour with a 35 h.p. engine.

In outward appearance the machine is fairly normal, but where it does depart from standard practice its originality is extreme and very successful.

The chassis is without shock absorbers of any kind, and is built in one piece with the cabane. The two inclined masts, which act at the same time as cabane and chassis struts, are timber baulks,  $3\frac{1}{2}$  ins. by  $2\frac{1}{2}$  ins., and, in spite of the various heavy falls which the machine has had, they have remained absolutely undamaged. There was originally a skid in front, but this has now been replaced by a third wheel, which has been found better for the bad conditions obtaining at Newtownards.

The wings are of the ordinary double surface type, tapering toward the tips, and they are provided with skids at the tips. Mr. Ferguson says that on many occasions these have saved not only damaged wings, but have prevented the whole machine from turning over, as infallibly happens if the sharp corner of the wing digs into the ground.

The tie-wires on the front spar are attached to the ends of the axle, the warping wires running right through, and the wires from the control are led into the axle over pulleys, and are fixed to two points on the warping wires.

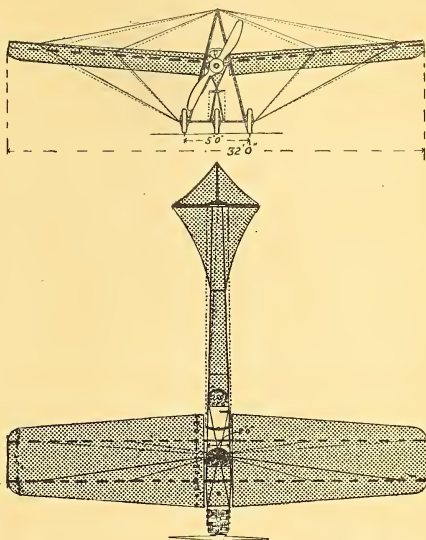
The fuselage is triangular, and is of the usual construction.

The pilot's seat is placed practically level with the top of the fuselage, and the removable passenger seat is placed just under the cabane.

The motor is a 35 h.p. J.A.P., which has been modified in various respects by Mr. Ferguson himself, apparently with excellent results, the fuel tanks being placed between the engine and the main spar.

Both spars are anchored to the fuselage very ingeniously. The ends are butted into steel sockets, which are held each between steel bearers running across the fuselage. The sockets sway freely in these bearers, so allowing the wings to be warped.

The control is a two-handed one, somewhat similar in effect to the Hanriot, though differently arranged. The elevator is worked in the usual way by the right hand.



The warping lever is curved so that it comes in front of the pilot's left hand, although its other end is underneath the centre of the fuselage, where it is attached to the end of a tube running underneath the fuselage. On moving the lever this tube works in bearings, the warping wires being attached to the front end.

Altogether Mr. Ferguson is to be congratulated on having, under great difficulties, produced a thoroughly practical and useful machine. Thanks are due to him for his kindness in explaining the points of his machine, and it is to be hoped that he will find sufficient financial backing to devote himself entirely to aviation.—P. K. T.



Mr. Ferguson descending.





Signor Manissero, the most popular Italian aviator.

#### Italian Notes.

Among the aeroplanes doing good work for the Italian Army in Tripolitania, the Etlich, which Lieut. Gavotti flies, has particularly distinguished itself by successfully dropping a kind of hand grenade containing picrate of potassium among the enemy.

These bombs were invented by the Government officials some years back for hand work, and are not very suitable for aerial use, except when an "observer" can be carried on the machine, which has not been done so far in actual warfare in Tripoli, owing to the troubled state of the air; consequently the work has been very difficult. Steep flights have been necessary for a thorough observation of the enemy.

Captain Moizo is said to have got his landing chassis struck by a bullet, which, true or not, suggests fitting a propeller shield. Gavotti, no doubt, found his celluloid windows useful. So far the balloon section does not appear to have been much needed, but should the Army go inland the dirigibles might make good water-carriers; at any rate, they would travel quicker than camels. Charging is an ever-present difficulty.

I heard at Somma a few days back that only the beginners will henceforth use that school, as the climate is kinder than at Aviano, which will be reserved for the experts.

At present several officer pilots are experimenting, with a lot of success, with a hydro-aeroplane on the Riviera.

Since my notes on the warplanes, Lieut. Derada has smashed up the old Government Farman by trying to carry an observer, and the volunteers have been called upon to hold themselves and their machines in readiness to start for Tripoli at a moment's notice.

They are to be sent in two divisions to the farthest points of the coast, evidently for scouting and spy work.

Manissero is in command of one division of five machines, Blériot and Deperdussins. An Asteria has been taken out by Lieut. Lampugnani.

The want of machines should be a lesson to the English authorities. The Italians have been for some time trying everything but unable to decide on the best type, though they have plant for building planes at Somma, and recently turned out a modern Farman, but I cannot find out where it has gone.

Anyhow there is no doubting the great use that the "Italian mosquitoes" (as the wags have it) are to the forces out there. T. S. HARVEY.

#### A Removal to Shoreham.

The Chanter Aviation School, which has hitherto been in operation at the Hendon Aerodrome, has now been moved to the Brighton-Shoreham Aerodrome, where it will be in opera-

tion on and after November 17th. Mr. Chanter manages to give his pupils plenty of practice, and the Brighton-Shoreham is acknowledged to be one of the very finest aerodromes in the country; in addition to which statistics show one has a better chance of fine weather in the Brighton district during the winter than almost anywhere else, and, furthermore, residence at Brighton or Shoreham must naturally be rather more pleasant than London in the winter.

#### An Excellent Scheme.

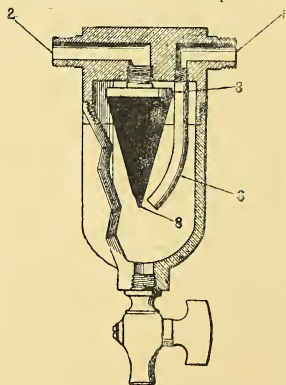
The Brighton-Shoreham Aerodrome managers have hit on the best scheme yet put forward to induce aviators to take up their permanent abode there. At most grounds it is the custom simply to lease hangars at a rent of about £2 to £2 10s. per week, which naturally makes flying rather expensive. The Brighton-Shoreham idea is to lease a site for a shed 40 ft. by 40 ft., with use of the aerodrome, for £40 per annum. The tenant can, if he chooses, erect his own shed, subject to the design being approved by the proprietors. If, however, he does not want to lay out the money in building, the proprietors are prepared to build the shed for him, and let him pay for it in instalments, charging him 5 per cent. on the amount left over each year.

For example, suppose a tenant wishes to spend £90 in building and to pay it off in three years, his annual payments would be: First year, one-third cost, £30; 5 per cent. on balance of £60, £3; ground rent, £40; total, £73. Second year: One-third cost, £30; 5 per cent. on balance of £30, £1 10s.; ground rent, £40; total, £71 10s. Third year: One-third cost, £30; ground rent, £40; total, £70. Thereafter there would be nothing to pay but the £40 per annum. If desired, the payments for the building can be spread over a longer period, and at the finish the tenant has property of his own, and is not merely there in a shed belonging to someone else.

A club-house is to be erected as soon as the permanent flying population warrants it, and the tenants will then be given free membership of the club. Further, tenants will not be required to pay any entrance fee or deposit for competitions organised by the proprietors. The Exchange Telegraph Company has an office on the ground, so that notable flights made there are promptly transmitted to the leading papers of the United Kingdom and Ireland. Living is quite as cheap in Brighton as in London, and the climate is considerably better, so, taking it all round, the Brighton-Shoreham Aerodrome should be well worth considering by those opening schools or about to start on experimental work. It is hoped to organise a meeting at the Aerodrome during the winter, and a goodly share of entries should be forthcoming.

#### A Smart Petrol Filter.

A fitting which should be of considerable use on aeroplanes is the petrol filter illustrated here. The whole instrument is exceedingly simple, and at the same time effective. The filter is fixed in any convenient place in the petrol pipe between the tank and the carburettor. The petrol enters at the aperture 1, passes down the tube 6, and up through the cone-shaped gauze filter marked 8, thence flowing to the carburettor through the aperture 2. If there should be any water in the petrol it accumulates in the bottom of the sump, and any dirt also falls down, so that quite a large amount of impurities can accumulate without doing any harm. Should the accumulation become so big as to refuse to pass out of the drain tap the whole sump can be screwed off. The whole thing is delightfully simple, and should, as a matter of fact, be a standard fitting for cars, as well as aeroplanes. Those interested will receive full particulars on writing Messrs. Brown Bros. and mentioning THE AEROPLANE, or letters sent through THE AEROPLANE will be forwarded promptly.



## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

### A Child and his Pop-gun.

SIR,—Please would you suggest that the young sportsman who amuses himself by firing off an automatic pistol on Brooklands aerodrome be requested not to, as it makes me Weybridge. NERVOUS.

[Will the infant with the pop-gun please desist? Parents should not allow their children to have toys with a 1,000 yards' range and an erratic trajectory.—ED.]

### Head Resistance of Wires.

SIR,—I notice in the current number of THE AEROPLANE a statement by Mr. P. K. Turner to the effect that "tie-wires are of immensely variable resistance, according as they are tighter or looser." I am very interested to know whether this is a result of direct experiment or a deduction from general observations on head resistance in complete machines. I should like to point out that Dr. Stanton, of the National Physical Laboratory, found that the difference between the head resistance of a vibrating or "singing" wire and that of a still wire was inappreciable. Dr. Stanton's results are, of course, beyond dispute, but they refer only to one particular case, and possibly the reference is to further experiments with which I am unacquainted. I should be very much obliged if Mr. Turner would give the source of his information, as the task of keeping up to date with every published result of experiment is a heavy one, and the result is probably one that I have missed.

Leytonstone.

L. PRESTON PARKER.

[The matter referred to by our correspondent is not one of recent experiment. I cannot at the moment recollect the original experiments which proved that a rapidly vibrating wire offers more resistance than a stationary one, but it has been a matter of common knowledge for years; it is also, on consideration, obvious that it must be so, since, first, the wire is, owing to its vibration, traversing a longer path through the air than a still wire, i.e., its air velocity is greater; and, secondly, that all the air within the limits of its path is disturbed, as in the case of a Gnome engine or a propeller.

Against this our correspondent cites an experiment made at the National Physical Laboratory at Teddington, the result of which, for some extraordinary reason, he says is "beyond dispute." To those who know anything of current aerophysics, any experiment made at Teddington is, *ipso facto*, open to suspicion, even if the experimenter were Zahm or Eiffel himself.—P. K. T.]

### Questions for Pilots.

SIR,—With reference to the answers given to Mr. Manning's questions last week, I do not think the method there stated for obtaining the points of the compass will be found of much practical use, and suggest that the aviator who flies without a compass is most careless.

At the moment I can only call to mind one navigator more foolish, he being the proverbial Dutchman who, on being required to "bring up" could not, because he had left his anchor at home.

The answer to the question seems to assume that the sun rises and sets all the year round at six o'clock. Of course, this is not so; the only time when it does so being at the Equinoxes. In addition, the sun seldom rises exactly in the East or sets exactly in the West, the rising position at certain times being N. 51 deg. E., and the setting N. 51 deg. W. As regards the actual movement in three hours from noon, this can vary from 68 deg. to about 43 deg., which shows how large the error would be if the watch method were employed.

Actually, to make use of the sun to obtain compass bearings, a pelorus must be employed, Burwood's Tables being referred to for the sun's declination for the day. Noting whether it is N. or S., subtract or add time to Greenwich mean time. This

is found from Equation of Time column, Nautical Almanack. Look up the latitude in which one happens to be flying. The pelorus would now be set with its sight on the sun at the bearing obtained, and the pointer representing the machine's head would give the course flown. These results would have to be corrected at least every four minutes to allow for the apparent movement of the sun.

It must not be forgotten that the above results are *true* bearings. To bring them to magnetic, which is what the compass shows, the variation must be added or subtracted.

After all, perhaps it would be simpler to come down and borrow a compass.

Kensington.

E. H. CLIFT.

### Home-Made Aero Motors.

SIR,—We note a reference in your current AEROPLANE "Visitors' List" concerning the 50 h.p. Alvaston engine which is shortly to be entered for the £1,000 prize Edinburgh-Glasgow flight by the Scottish Aviation Company.

It appears necessary for us to point out that this engine has had to be built in Scotland in order to comply with the conditions on which the prize is offered, which are that both aeroplane and engine must be of Scottish construction. We have no doubt that Mr. Norman and his colleagues will pull off the jaunt successfully (and incidentally the prize) at no very distant date.

It may interest your readers to hear that we have decided to supply a limited number of engine sets (castings, forgings, and drawings), at moderate prices, to build our 20, 30, and 50 h.p. Alvaston aviation engines, which will, we are of opinion, tend to further popularise the sport by enabling those experimenting in aviation, who may be first-class motor mechanics, to build their own engines from components which will ensure success, who are otherwise debarred from practical flight by the prohibitive initial cost of complete engines. To start out and design a successful aviation engine where only a single machine is in contemplation is likewise out of the question, and we believe, therefore, that our proposal will receive the support anticipated.—We are, faithfully yours,

Derby.

ALVASTON MOTORS.

### Still More about Freak Models.

SIR,—I think your correspondent, Mr. M. L. Rolfe, has evidently never seen a "Mann" monoplane or heard its designer, Mr. Mann, describe its capabilities, as he did nearly every day at the "Model Engineer" Exhibition.

All "Mann" monoplanes are fitted with a vertical fin, and the elevator is attached by an elastic band, both these things allowing adjustment for steering. Mr. Mann himself twists his vertical fin and turns the elevator in the direction in which he wants his machine to fly. Furthermore, Mr. Mann has won several prizes for steering. I, myself, have seen a "Mann" monoplane so adjusted that it flew in circles and landed within twenty yards of the spot from which it was launched.

Westminster

A MANNITE.

SIR,—I was tempted to think that my recent letter on this subject would be comprehended even by an inhabitant of Fæelbrücken, but, judging by his extraordinary and uncalculated criticism, the correspondent who writes under the suggestive *nom-de-plume* of "Piffelfleiger" has the haziest of ideas as to my meaning.

First, with regard to propellers: Freak models are frequently (!) fitted with propellers of a diameter quite disproportionate to the machines that they drive. For example, can "Piffelfleiger" imagine a full-size machine of 32 ft. span fitted with two 24 ft. propellers? Nearly all model makers are agreed that screws of large pitch are desirable on models, and I myself am convinced that screws of similar pitch, geared down to half the engine speed, would be equally effective on full-size machines.

It would be interesting to know what "Piffelfleiger" considers the ideal ratio between the weight of the frame and the weight of the rubber. Some model designers of the freak-loving category reckon 2 ozs. of rubber to 1 oz. of frame. I myself prefer 1 oz. of rubber to 2 ozs. of frame, but then I am a "wronghead." Again, I cannot agree with "Piffelfleiger" that "a model will fly almost exactly the same distance with propellers of any diameter." Furthermore, the addition of more rubber does not necessitate the use of a stronger frame, as the latter, if correctly designed and braced, will usually resist the pull of any extra "power" that one



cares to "crum on." My favourite demonstration and competition model—a "Mann"—will fly equally well with either four or eight strands per side, the only difference being that in the latter case the speed is increased at the expense of the duration and general efficiency.

It is perfectly true that, according to the engineering text books, *power is the rate of doing work*, and it is equally true that among practical model flyers it is the invariable custom to term rubber "power." "How much power are you using?" is a question that I have been asked scores of times at competitions; and even at Brooklands and Hendon one hears daily such remarks as: "That chap has got plenty of power on," "Plenty of power in that motor," "You cannot tackle *rémois* without power," etc. Of course, *power is the rate of doing work*, for when an aero-modeller doubles his power (or rubber) the results obtained—the revolutions of the propellers—are also approximately doubled, the speed being so great that in many cases the "slip" is materially increased at the expense of efficiency.

In reference to another matter, no practical model-flyer when he wants to double his power (I mean rubber) will employ a frame twice the length of the preceding one; if such were done—as may be the custom in Eselbrücken—the result would be a "freakoplane" that would put in the shade all the machines of this category that have ever yet come under my observation. Thus, an inhabitant of Eselbrücken possessing a machine 4 ft. long and 1 ft. 6 in. in span, and desiring to double the power, or rubber (it really does not matter which), would have to make his fuselage 8 ft. in length, which would surely be a little bit disproportionate to his 1 ft. 6 in. span, which presumably remains unaltered.

Now I put it to "Piffelflieger" that there are five ways of improving the distance that a model will fly, distance being the desideration under our present faulty competition rules. The first is the method presumably employed in Eselbrücken, i.e., increasing the length of the fuselage *ad infinitum*. The second is the method beloved by "freakoplanists" in general, adding to the number of strands and fitting propellers of gigantic diameter and quite out of proportion to the span of the machine. The third is by adding to the number of strands and employing proportionate screws of big pitch geared down to run at a comparatively slow speed. This is rational enough in theory, but has the practical disadvantage of considerably increasing weight and friction. The fourth is by adding to the number of strands without using gearing on the propeller shafts, which makes the machine one of the "fifteen seconds—quarter mile" category commonly known as "projectiles." The fifth and last is by using a comparatively small quantity of rubber and making the model so efficient as regards its propellers, planes, gliding angle, and lack of head resistance that it can cover huge distances without either sacrifice of proportion or the adding of any complications such as gearing. Is it not obvious even to "Piffelflieger of Eselbrücken" which method is the best both as regards simplicity and results? *Voilà tout!*

Surbiton.

ROBERT P. GRIMMER.

Sir,—In replying to "Roy's" letter, I notice Mr. Grimmer lays particular stress upon the diameter of the propellers used upon the "Mann" monoplane, and makes a favourable comparison between them and those used upon the Baby Wright and other machines, both as regards diameter and blade area. He carefully defends the "Mann" machine from the charge of freakishness by pointing out that with a 20-inch plane the propellers are only 9 inches in diameter, which dimensions, he states, is on a par with those used upon the Baby Wright.

Quite so, in diameter, but not in blade area. Judging from the photograph upon which "Roy" based his query, they must possess proportionately quite three times the area of the Wright propellers, which, I believe, are of the long, narrow type.

To my mind, a short, broad blade does not at all differ, so far as freakishness is concerned, from a long, narrow one of the same area.

I should like to ask Mr. Grimmer, were he reproducing the "Mann" machine on a full-size scale, would he also construct his propellers according to their present dimensions, or does he find their present shape best suited to the exigencies of a rubber drive?

I must also take exception to another portion of his epistle, in which he so arrogantly boasts of the pre-eminence of the "Mann" machine. True, it has a record or so to its credit, but what are these actually worth?

The idea of half-mile flights by this model is positively absurd when one troubles to analyse its capacity.

From various accounts I have gleaned that this so-called record was created by a model with 8-inch propellers of 24-inch pitch, driven by a rubber motor whose limit of revolutions was 1,000. After deducting only 25 per cent. for slip, the theoretical distance flown works out to 1,500 feet, which is a much nearer estimate of its capacity than the 2,600 odd feet with which it has been credited.

I fancy wind speed has been a great factor in the distances flown by the model, for it is evident that its recorded distance is anything but a true criterion of its capacity.

Regarding its success towards the end of the season, I can only ascribe this to the absence of the really big men at the game from competitions. Had Messrs. Fleming Williams, Burge Webb, Ding and Sayers, Clark, and others, including (let me whisper it) myself, been competing conditions would have probably been reversed.

Walthamstow.

R. R. DRAKE.

Sir,—I notice in THE AEROPLANE letters under the above heading. I can quite sympathise with those who attack the type of model to which this phrase is generally applied. The advent of disproportionately long models of the 1—1—P—O and 1—1—2P—O types seems to have given a death-blow to original experimenting, and it would appear that these types are the last word in aviation. Now that flights of a quarter to half a mile are within our reach, I am afraid there is very little likelihood of our ever again considering the few hundred feet of our earlier days a sufficient test of stability and directional sense. It is obvious that in the case of fair-sized, elastic-driven models, twin screws and long fuselages are essential for long-distance flights. Most of us have learnt by experience that tractor screws are less convenient, more liable to break, and less efficient than propellers. We are therefore faced with a comparatively heavy pair of screws at the rear end of a long fuselage, and to make the balance correct and the model stable we must put the maximum lifting effect at the rear end and use a small lifting elevator. In other words, we are reduced to one standard design, and a rubber motor allows of little or no originality or departure from this design.

What is really wanted, if model flying is ever going to take its proper place in aviation, is some form of motor in which the principal mass is concentrated within a very small area, as is the case with a full-sized power plant. I remember seeing in a recent number of THE AEROPLANE an advertisement, bidding us "Look out for our steam and petrol engines weighing from 2 ozs. complete with propeller." We are still on the look-out. I am at present experimenting with compressed air, but so far the results have been most discouraging.

Model builders would be doing much greater service to aviation if they devoted part of the time which they now waste on getting a yard longer flight out of their models to experimenting with a view to designing a really compact motor.

Bristol.

R. V. TIVV.

#### Aviation and Aerial Mountebanks.

Sir,—You have several times commented in your leader upon the tendency of the halfpenny Press to give such a prominent place to fatal aviation accidents. A great number of the public are bigoted against aviation, and when they read accounts of aviators who have met their deaths whilst flying, it serves to increase their dislike. If we get at the causes of the accidents, we are surprised to find that over half have been due to the reckless over-confidence of the pilot and not to any defect in the machine itself.

I wish some of the pilots would remember that what aviation wants is sterling good cross-country flyers like Mr. Hamel and Mr. Moorhouse, not simply aerial gymnasts. Mr. Moorhouse's recent experiment on a Blériot at Brooklands, when he ascended until his machine was almost vertical, and then switched off to see how he would come down, was, I consider, the height of foolishness. Luckily for him, the monoplane assumed its proper gliding angle, but had it not, we would have lost one of our best and most promising pilots.

Richmond, S.W.

JEREMIAH JENKINS.

#### The New Lebaudy.

The new Lebaudy dirigible, *Scille de Beauchamp*, carried out its second trial on November 1st, and rose to a height of 3,280 ft. Its dimensions have been erroneously given in the French Press. It has a capacity of 7,500 cubic metres, and is driven by two motors of 80 h.p. each.

### French Naval and Military Activity.

It has lately been thought desirable that there should be a naval aerodrome in the neighbourhood of Toulon, and various schemes have been submitted to the Minister of Marine. He has decided to establish it on the southern edge of the plain of Fréjus. M. Delcassé has already commissioned Vice-Admiral Martin-Darbel (*profet-maritime*) to examine the ground and estimate the probable cost to the Government.

General Roques, commanding the French Army Aviation Corps, has commissioned Commandant Voyer, director of military ballooning at Versailles, to visit the Nieuport School ground at Montpellier, and report thereon. Commandant Voyer's report is to the effect that the district and climate are admirable for the purpose.

When will the Admiralty start work at Eastchurch again, and when will the War Office use Salisbury Plain as it should be used?

### Spanish Army Interest in Aviation.

Col. Vives y Vich, Commander-in-Chief of Military Aeronautes in Spain, attended at Buc on the 10th inst. and made a long flight with Fourny on the Maurice Farman.

### The French Government Deperdussin.

On Friday last, the 10th, Vidart, Prévost, and Védérines took out the new 50-h.p. Deperdussin built for the French Government, and accompanied by Lieuts. Tréssasse and Briey, went for an "outing" round Reims, visiting Mourmelon, Châlons, Vervins, Epernay, and Laon. A covey of five Deperdussins must have been rather a pretty sight.

### Blériots in Tripoli.

As has been noticed in the various reports from Tripoli, the Italian army have with them three Blériots from among the Italian Government's supply—one of them being that on which Captain Piazza (chief of the Aviation Section) won the Bologna-Venice-Rimini-Bologna circuit a few months ago. These three machines have been so useful that the Government have put through an urgent order for another three, and have sent Captain Argenti to Etampes to take delivery.

### Natural Stability.

Mr. Le Maître, who is known to a certain circle as holding views on the subject of design, has chosen for a smart pamphlet, which amounts to an advertisement of a machine he hopes to build, the somewhat pretentious title of "Natural Stability." Unfortunately, however, he has epitomised the whole work in the sub-title, "The Parachute Principle in Aeroplanes." The parachute and the aeroplane are so diametrically opposed in principle and in action that one is strongly tempted to suggest that a course of lectures at some Polytechnic or other would be educative to the writer of the book.

In his preface, besides various other remarks, he finally states: "The writer has endeavoured to make no single statement which he cannot by some experiment amply prove." In connection with this announcement, the following excerpt is interesting: On page 11 he says, "... at present aeroplanes are the most unstable of all things." One wonders whether Mr. Le Maître has ever tried to punt in a Canadian canoe, which would probably convince him to the contrary. He happily ignores the fact that in the modern aeroplane the pilot practically leaves the machine alone to stabilise itself when once he is fairly off the ground.

After an introductory statement, of which the above excerpt is typical, Mr. Le Maître proceeds to explain the design of his machine. Of this part of the book it is kindest to say nothing, but it may be summed up as a trend of reasoning faulty in itself, based on incorrect premises, and leading to just the result which might be expected.—P. K. T.

### Reims-Issy in Two Hours.

Mahieu, on his Renault-Voisin, flew, on the 2nd inst., from Reims to Issy in two hours. Owing to the intense fog, he had to steer entirely by compass until he finally picked up the Eiffel Tower.

### Tuition Prices.

Headed by the Bristol Company's announcement last week, prices for tuition at various schools have suffered an all-round drop to bring them in line with the proposed Government grant of £75. The Blériot school offers tuition for £75, with a rebate of £10 if there are no smashes. Mr. Ewen, of the Lamark School, offers a rebate of £15 if there are no breakages, and the Scottish Aviation Company, at Barrhead, also offer exceptional terms. At this rate, every officer in the Navy or Army should be flying in a year or two.

### Wings for the Trade.

Firms, individual experimenters, or private owners who want really good wings should write Vickers, Ltd., for quotations. This firm always has in stock an enormous quantity of the best time-seasoned English ash for spars, and so can make wings of any type far superior to the common French-built wings, which are built on spars of Canadian hot-air-dried ash, and are nothing short of death-traps. Vickers, Ltd., are prepared to build wings at prices to compete with any firm, and their works equipment is an assurance that they can do so.

### Teaching the Young Idea.

The boys of the training ship *Mercury* at Hamble, Southampton, of which Mr. C. B. Fry is honorary director, will begin a special aeronautical course, arranged by the Young Aerial League for Boy Scouts, on November 27th. A special text-book has been prepared, and Mr. C. B. Fry himself will undertake the work of instruction on board the *Mercury*. The different aspects of aerial scouting at sea will be considered, and the future bearing of flying upon the Navy will be dealt with fully.

### A Good Test Run by the 53 h.p. Anzani.

During a bench test of a six-cylinder 60 h.p. Anzani at the laboratory of the French Automobile Club, the special test propeller was damaged, and in order to carry out the test, the motor was fitted with a standard "Normale" propeller, which, of course, throws only a small slip stream over the motor. Notwithstanding the small cooling effect, the motor ran for three hours, and was stopped then by a fitter accidentally switching off while examining the revolution indicator. The motor started again on the switch and went on for another three hours, developing 60 h.p. at 1,570 revs. and 50 h.p. at 1,400 revs.

### A Useful Glider.

The much boomed Wright Bros.' gliding experiments ought to give a certain impetus to gliding in this country, and anyone who is interested in the subject would do well to pay a visit to Mulliners' aeroplane workshop at Vardens Road, Clapham Junction. Mr. Leeper, the works manager, has recently completed there a very smart little biplane glider with a non-lifting tail, which ought to be quite a useful instrument for experimental work. The construction is excellent, and it is understood that the machine is to be sold very cheap, as Mr. Leeper is anxious to do all he can to popularise the sport. It will be remembered that Mr. Leeper was chief mechanic to the late Hon. C. S. Rolls, and carried out many interesting experiments while with him, so his work can be thoroughly relied upon.

### A Partner Wanted.

The proprietor of a firm with well-known name says that he wants a partner with a few hundred pounds to come in with him and to develop his accessory business. He remarks: "We are well away now with orders for propellers, and, in fact, I could capture any amount of orders, which now I have to let slide in a polite way, if only we had a little more capital." Knowing the writer of the letter, one can say with certainty that a working partner going in with him would have quite a good chance of building up a successful business in accessories and parts and models.

### THE VISITORS' LIST.

MR. CLAUDE GRAHAME-WHITE, freshly arrived from America and just off to France, came up to wish THE AEROPLANE good luck. He is naturally pleased with the financial success of his visit to the States, and is returning in the course of a week or so to California, where he has some very good flying engagements booked during the winter. He naturally finds the Hendon Aerodrome considerably altered since he left, for the new building and repair shops which have been equipped by Mr. Leonard Williamson are now practically completed, and before very long the Grahame-White Aviation Company, Limited, should be turning out machines of their own there. It is part of the firm's scheme now to build machines to any design for experimenters and designers, and it is also the firm's intention to lay themselves out particularly to do repairs at the lowest possible cost for tenants of the various sheds, for with the new up-to-date labour-saving wood and metal working machines in the repair shops Mr. Grahame-White feels sure that his men can do the work quite as cheaply as the amateur constructor can do it for himself. THE AEROPLANE has always put forward the claims of Hendon as being one of the finest aerodromes in the United Kingdom, and it is to be hoped before long it will be patronised by aviators as it deserves to be.



MR. S. F. CODY called to acknowledge, in his usual breezy way, THE AEROPLANE's congratulations on his winning of the two Manville Cups. He gives the interesting information that since the "Circuit of Britain" he has altered his machine by putting on a negative dihedral, exactly equal in amplitude to the positive dihedral with which the machine was previously arranged. This naturally makes the machine much more tender sideways, but it certainly increases the efficiency wonderfully, as he is now able to carry something like 150 lbs. more weight than he did during the "Circuit." He is full of praise for his 60-80 h.p. Green engine, and says that he has now got the lubrication so exact that he only used 4½ gallons of oil during his 6 hrs. 20 mins. flight for the Michelin Cup. This must certainly be a revelation to users of French engines, who are in the habit of using something over two gallons of very expensive castor oil per hour for 40 h.p. against Mr. Cody's four-fifths of a gallon of ordinary Vacuum A for between 60-80 h.p. Mr. Cody said that during the last hour of his flight the wind was exceedingly bad, and that he was compelled to come down and fly low, where, though it was more gusty, he was able to make better time for the circuit. He talks now about putting a 120 h.p. Austro-Daimler into the machine, so as to see what she can really do in the way of speed, though he is quite satisfied that, at its power, he cannot improve upon the Green.

MR. JAMES RADLEY kindly gave THE AEROPLANE an exceedingly good photograph of his late friend Mr. Eugene Ely, for whom he had great admiration as a flyer. This will be reproduced next week. In the course of conversation Mr. Radley pointed out that the Huntingdon Aerodrome is practically the only one in England where it is possible to get a straight away cross-country flight without having to climb over trees or buildings first. As a matter of fact, Huntingdon is undoubtedly the only aerodrome in England where one can get long-distance cross-country flights over perfectly flat, open country in any direction. One can leave it either to the south or to the north-east without flying over either a tree or a house. All the country round for a matter of twenty miles at least consists of big open fields, where one can land with safety, so that it is practically ideal for cross-country flying.

MR. DRIVER called to say good-bye prior to leaving for South Africa. Mr. Paterson having already sailed. He has now become one of our very finest flyers of Blériots, and the people of South Africa will have the pleasure of seeing monoplane flying of the very first class when Mr. Driver actually gets to work. It is hoped that the military authorities in South Africa in particular will pay special attention to Mr. Driver's flying, for they are likely to learn from his racing Blériot what could have been done during the war if we had only had two or three aeroplanes at Spion Kop or Magersfontein.

#### CLUB NOTES.

**Manchester Model Aero Club.**—Club held last flying meeting of the season on Saturday. Williamson's model was timed for 40 sec., and was still flying high when it disappeared into bank of fog. When fog lifted model was found great distance away and in quite different direction to that expected. A discussion, with competition for paper gliders, will take place on or about November 30th. Particulars later. —Keweenaw News (Hon. Sec.).

**Aberdeen Aero Club.**—Large turnout at Kinloch on Saturday, fourteen members competing for distance and duration; distance won by D. Brown, with 575 ft., and duration by K. Wilson, with 45 sec. Taking weather into consideration, these two very creditable. Lively meeting was held in Trades Hall at night, and very enjoyable evening spent. Two excellent papers on models were read, some lively discussions on the models taking place. Competition for distance is to take place on December 1st, at 3 p.m. Members requested to be on ground in good time. New members are steadily enrolling, and club is in a very prosperous condition. —A. Sifton (Sec. and Treas.).

**Coventry Aeroplanes Building Society.**—Distance competition on 11th at Birmingham Road. L. Ryley, 1st prize, 438 ft.; C. Cobb, 2nd, 410 ft.; M. model, 420 ft.; and R. Rice, 3rd, 359 ft. Overton's "O.K." monoplane flew 46 sec. duration, but circled back to 305 ft. New members urgently required, as it is hoped to commence building club glider shortly. Flying every Saturday afternoon at Birmingham Road.

**Blackheath Aero Club.**—Sir Edward F. Coates, Bart., M.P., has kindly consented to become patron of the club. Last Saturday Clark and Brough made flights for second-class certificates. Numerous spectators at Grove Park last Saturday, and are hoped to organise big meeting. Competitions on Saturday, December 2nd, for "distance" and "duration," at Kidbrooke ground, at 3 p.m. Attendance not likely to be less than 2-45 p.m. Particulars from A. Kippon (Hon. Sec.), 5, Limesford Road, Nunhead, S.E.

**Bristol Model Flying.**—Weather too wet for meeting announced last week; competition will be held on the Downs, at 3.30 p.m., on November 18th. Will those sufficiently interested to form a low-subscription club please communicate at once, unless coming to model flying meeting on Saturday. First meeting will be announced in due course.—R. V. Tivy, 3, Royal York Crescent, Clifton, Bristol.

**Scottish Aeroplane Society Model Aero Club.**—Successful meeting at Renfrew on Saturday. Attacks on duration records. Best flight by J. C. Balden, with 431 sec. Gordon's machine with twin four-bladed propellers made first appearance. Arthur's baby model made fine flights. Span not more than 6 ins. and twin 2-in. propellers. Members please note first lecture on November 24th at 8 p.m., in the Engineers' and Shipbuilders' Institute, Elmbank Crescent, Glasgow. Subject, "Aviation up-to-date, with special reference to its Army and Naval Uses." Lecturer, Col. J. A. Sillars. Lecture will be illustrated by limelight views. Full muster of members and friends requested. Model flying meeting as follows: November 18th, at Barhead, and November 25th at Ibrox. Members who do not know Ibrox ground please meet at Bellahouston Park Car Station, Paisley Road West, Glasgow (Hon. Asst. Sec.).

**Conisbrough and District Aeroplane society.**—General meeting November 10th, 1911. Resignation of T. S. Wallis as one of joint secretaries accepted. J. I. Webster appointed to take over responsibilities. Decided to award first and second-class certificates (subject to approval of Kite and Model Aeroplane Association). Qualifications for first class certificate:—(1) Fly model of own construction entirely a distance of 600 ft., and (2) also 30 seconds' duration. (Theoretical) (3) Draw plan (on scale) of given model. (4) Explain why an aeroplane flies. (5) Find pitch of any model propeller. Qualifications for second-class certificate:—(1) Flight of 300 ft. (2) Model to be candidate's own construction (propellers excepted). In future all communications to J. I. Webster (Hon. Sec.), 18, Church Street, Conisbrough.

**Yorkshire Aero Club (Model Section).**—Saturday last enjoyable afternoon in Beckett's Park. Competition for silver medal won by Whit. Thornton; duration competition by T. Walker, J. Whitaker running close second in both events. At dusk several members illuminated illuminations. It was the first time that a meeting will be held in Carlton Hall Drill Hall on Saturday, 18th, at 3.30. Will the gentlemen from Dewsbury who were present last Saturday please write the Hon. Sec. at 54, Hurland Street, Leeds?

**Birmingham Aero Club.**—Height contest held, Trykle trying propeller 3 ins. larger than usual managed to win. Thompson and G. Haddon Wood close up. On Sunday blowing hard. Model flying worth seeing, first big flight by G. Haddon Wood. Wind, which must have travelled 50 and 60 m.p.h. Trykle's first flight sensational. Model got up to good height, turned, flew with wind, and then about 500 ft. struck into the trees and fell, and finished with circle 1,500 ft. from starting point. Shed has now been installed with lamps in preparation for the construction of the glider.—G. Haddon Wood (Sec.).

[N.B.—Club reports arriving later than first post Monday morning cannot be published.—ED.]

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AEROPX, London.

Telephone: Mayfair 6407

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
3 months, post free	—	1	8	3 months, post free	—	2	9
6	"	"	3	6	"	"	5
12	"	"	6	12	"	"	11

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c Payee only," otherwise responsibility accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.

# MULLINEUX

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.

## Sole Agents for NORMALE PROPELLERS

The Most Efficient Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race, the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA. TELEGRAMS: "AEROCRAFT," LONDON.

**MISCELLANEOUS ADVERTISEMENTS**

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words 1/6; Situations Wanted ONLY—18 words 1/-, 1d. per word after.

**FINANCIAL.**

**S**YNDICATE being formed to exploit well-trying all-British Monoplane. For full particulars and to see machine in flight, apply Box No. 404, THE AEROPLANE.

**MACHINES.**

**M**ONOPLANE, thoroughly tested, complete, 40 h.p. Engine, spares, etc., cost £800, owner going abroad, sacrifice £285 quick sale. Also 45 h.p., J.A.P., 8 cylinder Engine, £265 complete, cost £280. GRATZ LIMITED, 44/46, Whitfield Street, London, W.

**£400** SPECIAL OFFER of twelve AVRO Biplanes complete with 35 h.p. Green engine. Usual price £600. Offer withdrawn November 30th.

Write at once for particulars.—A. V. ROE & Co., Brownsfield Mills, Manchester.

**N**O REASONABLE OFFER REFUSED. New 3-seater "Valkyrie" monoplane; 80 h.p. engine; Spiral Tube radiators; Claudel-Hobson carburettor; beautifully built and finished; been through trial flights; FOR SALE as a bargain owing to death of owner.—Box 401, THE AEROPLANE, 166, Piccadilly

**ENGINES.**

**35** H.P. GREEN ENGINE, practically new, only run on test; price £120, complete with radiators and all fittings. Box No. 403, THE AEROPLANE.

**1912** ALVASTON aviation engines. Fitted with latest improvements. The only reliable engine that appeals to those of moderate means. May we send you full particulars?

**1912** ALVASTON engines. We have decided to supply a limited number of components for building our 20, 30 and 50 h.p. (including licence to construct) at moderate prices, in order to enable mechanics having the skill to assemble an aeroplane engine to produce a successful power plant at small cost.

**1912** ALVASTON engines. Vibrationless, robust, light, extremely efficient. They have pump lubrication, horizontal opposed cylinders, all steel parts forged from Chrome Vanadium steel. ALVASTON MOTORS, Derby.

**W**ANTED, 70 h.p. Gnome, in good condition, exchange brand new 50 h.p. Gnome and cash.—Box 400, THE AEROPLANE, 166, Piccadilly.

**PROPELLERS.**

**P**ROPELLERS.—Avro propellers of proven efficiency. "Pashley fitted Avro propeller, suddenly found troubles disappeared, and flew five good circuits." [AEROPLANE.] Equally good results if fitted to your machine. A. V. ROE AND Co., Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best, Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

**"B**BLACKBURN" propellers supplied, and successfully used on all the leading motors. THE BLACKBURN AEROPLANE Co., Leeds.

**TUITION.**

**T**UITION, with or without limited liability, Blériot XI, personal instruction.—Box No. 405, THE AEROPLANE.

**£50.** TUITION in flying till certificate is won. Avro pupils won Manville, Brooklands aggregate, 1st, 2nd, 3rd; Brooklands, October 4th, 1st and 2nd, The AVRO School for most thorough and all-round instruction. A. V. ROE AND Co., Brownsfield Mills, Manchester.

**£75.** TUITION for Aviator's certificate on both Deperdussin and Blériot Monoplane. Insurance against breakage and third party risk.

**£15** RETURNED to pupil in the event of no breakage. Perfect equipment. Personal instruction. Write for agreement form. W. H. EWEN Lanark Aerodrome, Lanark.

**H**ERBERT SPENCER FLYING SCHOOL, Brooklands Aerodrome, Weybridge. Practical Aeroplaning—Ballooning and Parachuting—constructional work. Fee from £50—Special terms to Naval and Military officers.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

**D**EPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD, 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

**F**ILEY AERODROME. Tuition on Blackburn or Blériot Monoplane. For particulars apply BLACKBURN AEROPLANE Co., Leeds.

**MISCELLANEOUS.**

**H**ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**F**OR SALE AT BARGAIN PRICES.—A three years' accumulation of new and slightly used aeroplane parts as follows:—Fuselage for biplane or monoplane, Simms magneto, 1 White and Poppe and four Green carburettors, four control levers, two rudder foot levers, metal foundations for 50 h.p. Gnome, 2 steel shock-absorber springs, Blériot type, pair Lamplough radiators, large assortment propellers, wheels, tyres, tanks, cushioned seats, strainers, ferrules, rudders, elevators, ailerons, 3 sets monoplane planes, sockets and fittings, etc., etc. Must clear to make room. AERONAUTICAL SYNDICATE, LTD, Flying Ground, West Hendon, N.W.

**FLYING MODELS.**

**"M**ANN" MONOPLANE.—Owing to the enormous demand for this machine, we are unable, for the present, to accept any further orders. What we can still supply by return of post are parts for constructing a "Mann" Monoplane 5/6, "Mann" propellers 3/6 per pair, "Mann" geared winders 5/6, "Willis" 1/4 inch strip rubber 1/6 per dozen yards, and "Willis" lubricant 9d. per bottle. From all large toy shops and stores, or post free in THE UNITED KINGDOM only from the sole manufacturers, WILLIS BROS., 14, Wellington Square, Hastings.

**M**ODEL PROPELLERS—Genuine CHAUVIERE—8in., 10in. and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.

**A**LLWEATHER single propeller Monoplane, guaranteed flight 1,000 ft., price 10/6 post free. THOROGOOD Co., Icknield Way, Letchworth, Herts.

**Y**OUR CHANCE, 2/- POST FREE. The Little Gem guaranteed Flyer Twin Propeller Monoplane. Complete post free in British Isles only. WESTON CURLIN Co., 13, Milford Lane, Strand.



# THE AEROPLANE



Edited by CHAS. G. GREY, ("Aero-Amateur")

Vol. I.]

THURSDAY, NOVEMBER 16th, 1911

No. 24

## The "BRISTOL" FLYING SCHOOLS

AT  
SALISBURY PLAIN  
AND BROOKLANDS

have trained nearly

One-third of England's  
Aviators,

including

25 NAVY AND ARMY  
OFFICERS.

This constitutes

A GREATER PERCENTAGE

than that of

ANY OTHER SCHOOL  
IN THE COUNTRY.

Ideal Equipment. No Waiting.  
Good Instructors.

FOR FULL PARTICULARS APPLY TO

The British & Colonial Aeroplane Co., Ltd.,  
FILTON, BRISTOL.

To Navy & Army Officers

**TUITION** on Monoplane  
or Biplane,

AND

**INSURANCE** against  
Breakage

and Third Party Risk.

HAS BEEN REDUCED TO

**£75**

(the amount of the GOVERN-  
MENT GRANT to officers taking  
the Aviator's Certificate).

Average Time occupied in Tuition—3 weeks.

"THE AEROPLANE," NOVEMBER 23, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

12  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, NOVEMBER 23rd, 1911.

No. 25

THE FAVORITE.

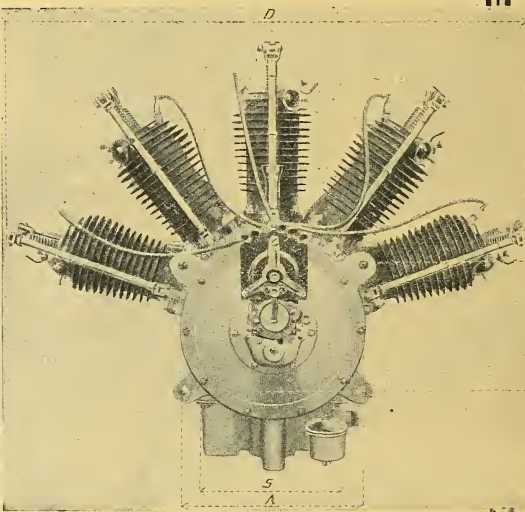
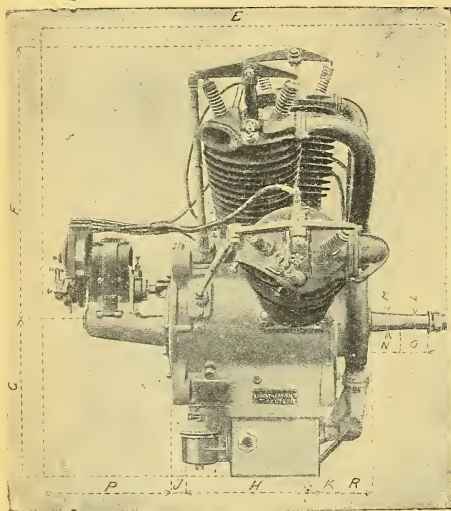


Weymann on the 100 h.p. Nieuport, who is regarded in France as an almost certain winner,  
making his second attempt at the final test in the French Military Trials.

SMITHSONIAN INSTITUTION OCT 27 1959



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

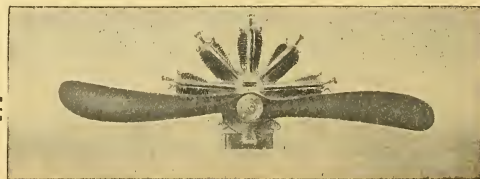
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.



# CONTENTS.

	PAGE		PAGE
IN THE OPEN... ..	579	THE ROYAL AERO CLUB METTING ...	588
MILITARY AVIATION		HOW TO FIND A SUITABLE PROPELLER PITCH	588
(CAPTAIN BURKE'S LECTURE) ...	582	THE WEEK'S WORK... ..	589
THE FRENCH MILITARY TRIALS ...	584	CORRESPONDENCE ... ..	595
AIR CURRENTS ... ..	586	MODEL CLUB NOTES ... ..	598

## In the Open.

Light has been thrown on the underlying causes of the Government's extraordinary attitude towards military aviation. The War Office, or, at any rate, that section of the War Office which is responsible for our backward, one may even say perilous, position in the matter of aerial defence has at last come out in the open, and having got it there we have our opportunity to keep it on the run till we finally attain our ends, namely, the institution of an adequate system of aerial defence for this country, and adequate support for the manufacturers who will have to supply the means for such defence. At any rate, we now know pretty well where we stand.

Colonel Seely, the Under Secretary for War, is openly and honestly in entire sympathy with military aviation. General Sir Charles Haddon, Master-General of Ordnance, is known to be not only unsympathetic towards aviation, but to be personally opposed to it. The Army Aircraft Factory and its officials are merely concerned with saving their own faces, and so are quite indifferent as to what happens to the British trade so long as the nation supplies them with a pattern to copy.

Of the General Staff of the War Office certain officers are firm believers in military aviation; others of them are definitely opposed to it; while yet others, of whom Colonel Hunter Weston, to whom reference is made elsewhere, is one, are so utterly ignorant on the subject that they are even more harmful than if they were actively in opposition.

Added to this we have the chronic trouble of all Government departments who wish to make any new move, namely, the difficulty of getting money out of the Treasury, and in this case the difficulty is increased by the fact that the Treasury Officials must have an entirely erroneous idea of the cost of aerial defence, owing to the wickedly wasteful fashion in which the Government grant for aeronautics has been squandered during the past year. Part of it has gone on silly experiments such as building wind tunnels, and various testing apparatus at the Aircraft Factory, when the construction of such apparatus belongs, by rights, to the sphere of the National Physical Laboratory at Teddington. Still greater sums have been wasted on building sheds and increasing the accommodation at Farnborough for dirigibles, which do nothing in a most elaborate manner. And further sums still have been spent on building impossible aeroplanes which are either useless or actively dangerous when completed.

Therefore, this knowledge is so much to the good, and the task before all of us who are interested in the

aerial defence of the country is to overcome all these obstructions. There are two ways of attaining our ends. One is by means of questions in the House of Commons; the other is by practical proof that we can build machines the equal of anything turned out in France.

So far as questions in the House are concerned, the Parliamentary Committee of Aerial Defence, as a committee, has as yet done nothing, but we live in hopes. Mr. Joynson Hicks, and Mr. G. J. Sandys, ably seconded by other members, have already given good proof of their intention to fight the question to a finish in the House of Commons. It is possible also that the meeting held at the Royal Aero Club on Tuesday may have far-reaching effects when the plan of campaign has been definitely developed.

It appears that the Society of Motor Manufacturers and Traders cannot be relied upon for assistance, owing to the fact that that body, powerful as it is, cannot, owing to its constitution, take up the cause of the British constructor, because it includes among its membership foreign motor firms, or rather their representatives in this country, and these firms undoubtedly have strong claim to object if the Society take up a strenuously pro-British attitude. One may, therefore, leave the S.M.M. and T. out of the reckoning, though undoubtedly some of its more influential members may be of considerable assistance on their own account.

There remains then the question of manufacturers proving definitely and publicly that our machines are as good as the French machines. The representative of one of the leading daily papers put it to the writer recently in this way. He suggested that any British manufacturer with faith in his own machine should arrange for himself a test similar to that passed by the French military machines, and that when he had produced a machine to his own satisfaction capable of passing those tests, he should notify the representatives of all the leading British papers to come and observe the passing of the test. Should the machine pass the test successfully, every paper in the country would undoubtedly blazon the fact forth, and the Government would be practically compelled to buy such machines.

It is not, however, altogether likely that many British constructors would go to the expense of producing big heavy three-seated aeroplanes of the type produced for French Military Trials, but it must not be forgotten that outside these particular trials the French Government are buying single-seaters, and two-seaters, in vast quantities, and that these also



are subject to speed and climbing tests, as well as workshop tests, by means of sand loads on wings. It therefore seems quite probable that if the manufacturers of this country would combine among themselves to hold an exposition of the capabilities of their various machines on some fairly accessible aerodrome, and would invite the members of the lay Press to witness those trials, so that they could be convinced that the British aeroplane will do anything that the French aeroplane will do, the Press would give the trade their support, for there undoubtedly exists, not only in the Press, but among military men, and actually in the councils of the Society of Motor Manufacturers and Traders itself, an entirely erroneous idea that the British-built machine is not the equal of the French machine, and it is necessary to remove this idea in a manner which is at once convincing and striking.

Machines capable of such performances exist in England to-day, and concerted action on the part of the manufacturers would, undoubtedly, produce the effect suggested. Once this is done, an agitation in the favour of British machines can be carried on with the assistance of the friendly Members in the House, and it is quite certain that the obstruction of the Army Aircraft Factory, the General Staff of the War Office, and the Treasury, would be swept away before the wave of public opinion.

It is fairly obvious that, having announced in the

#### Our Intelligent Legislators.

In the course of the agitation which is being carried on in favour of all-British war planes, a well-known man in the aviation world, who resides in Westminster, wrote to his local M.P. asking him to use his influence in support of the British constructor and the British workmen whom he supports either as employer or as purchaser of material.

The following is the reply he received:—

Dear Sir,—In reply to your letter, I dare say you are aware that under present circumstances I have no means of bringing any influence to bear upon the Government; and the House of Commons has become so entirely a machine in the hands of Ministers of the day that it is impossible to bring a matter of the kind you mention forward. The terms of the competition certainly are such as to discourage any development in the manufacture of aeroplanes in this country, and that is to be deplored with regard to any home industry. Quite apart from this fact, however, I have my own doubts about the future of aeroplanes as an article of profitable manufacture. They can only become so if they come into general use, and my own idea is that there is not much prospect of that. I think they will always be used for military purposes, but

House that the proposed competition is to be opened to the World, the War Department cannot go back on its word, and so an international competition, must be held. There is, however, no reason why the winning of that particular competition should be accompanied by orders. Let us, since it must be so, open the competition to the world, and let us allow the Aircraft Factory to copy the winner, if it can. And then let us hold a series of tests for British constructors, with large orders for all who pass.

If a foreign constructor fancies his chance, we might even let him enter a machine provisionally for such tests also, but solely on condition that if he passes he must supply machines built in England, and that such machine must, before being accepted, pass the same tests as the machine with which he qualified. This will at any rate ensure that he either opens works in this country and employs British labour, or that he arranges with a British maker to construct under licence. In either case we shall have the means of supplying our army with adequate machines in time of war.

In such a case, with big orders to follow, it is worth the British constructor's while to enter his machines, and for British capitalists to help him to do so, and the writer ventures to suggest that, subject to such alterations as circumstances may impose, we should all work together to achieve this end.

if that is their limitation they will probably be manufactured in Government factories.

I will consider the possibility of framing a "Question" on the subject, but that is not a very satisfactory way of exposing the policy of the Government as one is limited in the amount of explanation allowed.

Yours very faithfully,

1, Stratton Street, W. (Signed) W. BURDETT-COUTTS.

Considering that the Government, as a Government, is very much in favour of aviation, and that it is the Permanent Officials who are the hindrance, this letter shows how such party spirit makes itself manifest. Further, the letter shows how little support the independent constructor might expect were any other party in power with which Mr. Burdett-Coutts had any influence. Presumably Mr. Burdett-Coutts is ignorant of the fact that the major portion of our military and naval equipment, from boots to battleships, is supplied by independent manufacturers, quite apart from his ignorance of the fact that the Government Air-Craft Factory is a failure, and that aeroplanes have a great future for "general use." What can one expect of the people when their elected legislators show such lamentable lack of general knowledge?



Mr. Frank M'Clean (in the bonnet) explains the virtues of his new mount to Captain Gerrard (in the cap), Mr. Horace Short (in the hat), and the Hon. Maurice Egerton (*au plein air*).

# *The British-Built* **DEPERDUSSIN MONOPLANE**

## **2-3 SEATER MILITARY TYPE**

### **With 80H.P. Anzani or 100H.P. Gnome**

IS NOW BEING MANUFACTURED IN OUR

## **London Works.**

### ***Latest Success!*—French Military Trials at Reims.**

The DEPERDUSSIN had two machines classified.

The DEPERDUSSIN gave the finest results.

The DEPERDUSSIN climbed to 1,600 feet in 9 minutes 2 seconds.

The DEPERDUSSIN got out of the ploughed field test with 40 yards run.

The DEPERDUSSIN did this with 675 lbs. dead weight, and 1,600 lbs. of machine.

## **THE DEPERDUSSIN AVIATION SCHOOL AT BROOKLANDS.**

### **Thorough Tuition**

ON DEPERDUSSIN MONOPLANES

## **£75**

Including all Expenses, Breakages (if any), Third Party Insurance.

**A PRIZE of £15 is offered to all pupils who shall obtain the Pilot's Certificate without Breakage.**

*For full particulars apply*

### **The British Deperdussin Aeroplane Syndicate Ltd.,**

Wires:  
MONODEP, LONDON.

30, REGENT STREET, W.

Phone:  
280, GERRARD.



## Military Aviation.

### CAPTAIN BURKE'S LECTURE AT THE UNITED SERVICES INSTITUTE.

On November 15th Captain C. J. Burke, of the Royal Irish Regiment, gave a most interesting lecture on "The aeroplane as an aid to the solution of existing strategical problems," Major-General R. M. Kuck, C.B., being in the chair. Captain Burke, who is one of the finest flyers in the Air Battalion, naturally spoke as only a practical man can. He opened his remarks by saying that this problem is one which soldiers should grapple with without delay. It is: How does the aeroplane affect the views on strategy which are at present held by the two principal schools of military thought in Europe? The following extracts give the chief points of his argument.

Going straight at the subject he said: "The aeroplane is a weapon of war; it is a part of the equipment of the modern army as vital to its efficiency as are motor transport and wireless telegraphy. It is a weapon, the use of which we have not completely gauged, the value of which we have not fully appraised. So utterly unaccustomed are we to reckon with it in studying war that we fail to realise its possibilities.

"Already it has revolutionised our methods of studying maps; already the rivers, mountains, and forests have lost considerably in importance. The very topographical features which we have been accustomed to regard as screens to manoeuvre have lost their significance, and have become mere obstacles to the rapid movement of troops. The fortress offers no obstacle to the aeroplane, the mountain and the forest hold no mysteries for it. We are confronted with new conditions, and it is not likely that strategy will be unaffected by these new conditions.

"But, firstly, what is the function of the aeroplane? Without going into technical details, what may a general expect from the existing aeroplane in the hands of a well-trained pilot? What orders can he issue? What result may he expect?"

"The aeroplane can make a flight of 180 miles with one or two passengers, and—a fact which is not commonly realised—it can do this on 80 per cent. of the days of the year. And so, because the aeroplane can be used with comparative safety on 80 per cent. of the days in the year, it will usually be possible for the general in command of an army to dispatch his staff officer as a passenger in an aeroplane to reconnoitre a point sixty miles away, and, if all goes well, the general will be in possession of that staff officer's report in less than three hours.

"Hitherto officers of the general staff have accompanied the advanced troops in order to probe the situations as they presented themselves, and, if needful, to report to headquarters. Difficulties of communication, slowness of movement, and congestion of roads made this necessary, but in practice it has always proved unsatisfactory, as there has always been a danger that the best possible information gained by the advanced troops may be so greatly delayed in transmission as to lose half its value. The old system cannot compare with the new system, by means of which staff officers will be carried as passengers in aeroplanes to the head of the advanced columns, and will convey messages personally and correctly to their general with a celerity comparable to that of the field telegraph. That these very messengers should also be trained staff officers, who are capable of sensing a strategic situation as it develops, must be of the greatest value to a commander. It must be borne in mind that, if the weather is really good for flying and observation, the movements of troops are as clear to an observer in an aeroplane as the movements of the pieces on a chess board.

"On the outbreak of war it is to be expected that the aeroplanes of both sides will endeavour to reconnoitre and to pick up all the information possible about the enemy's concentration areas. It is probable that the first day will see them in collision, as it is vital to success that the enemy should be deprived of the use of aeroplanes as early as possible in the campaign. It appears probable that the passengers in the aeroplanes will carry weapons of precision, which they will use against their adversaries, or it may even be necessary to have recourse to wrecking the hostile aeroplane by the back wash of the propeller, although that is a very risky proceeding.

"There will be a struggle for the supremacy of the air, from which one side or the other must emerge with a decided advantage, i.e., a numerical superiority of air craft.

"Since it is probable that both antagonists will put forward all their best pilots on the outbreak of war, in order to attain a decisive advantage from the beginning, it is improbable that either side will be able to replace their pilots, even if they

are able to produce fresh aeroplanes. One antagonist will, after this aerial battle, remain, we may confidently assume, in command of the air.

"And now we come to the crucial point of the whole matter—the manner in which the aeroplane will affect strategy. What will be the bearing of the aeroplane upon the two great systems of war, which I will designate as the French and German systems? The German system is distinguished by: (a) a bold advance; (b) the enveloping attack; (c) full initiative. The characteristics of the French system are: (a) manoeuvre at the commencement in preference to deployment; (b) a large waiting force; (c) control by the commander-in-chief.

"It is also known that German war seeks for success in the envelopment of an enemy whose actual position is often ascertained by a process of reasoning as the best move open to him; this plan is adopted in order to avoid the loss of time incident on reconnaissance. The envelopment of the enemy is brought about by the advance of columns on a broad front.

"The great danger of this method is the possibility of the defeat of those columns in detail before they close in on their prey. This danger is guarded against in the German system by a high degree of training in initiative and co-operation which leads column commanders to close with the enemy as rapidly as possible, wherever he is encountered, in order to deprive him of freedom of movement, in the certainty that their comrades to right and left of them are doing the same, and, by their vigorous action, are relieving hostile pressure. One drawback to this form of war is that, should the position of the enemy not conform to the hypothesis of the commander-in-chief, the latter has great difficulty in altering his plan by giving fresh directions to his columns, for the control of the operations, once they are started, is practically in the hands of the column commanders. Another drawback is that, if the position of the enemy has not been correctly surmised, the converging columns may close in on an empty space.

"The German system is especially adapted to working in the 'fog of war.' It demands character and vigour rather than intelligence in its column commanders. It assumes that information will not be forthcoming in war, at any rate not in time to be acted upon, and that, therefore, it is necessary to have a simple definite plan of action laid down beforehand and a vigorous and irresistible initiative. Who can forecast to what degree the aeroplane in the future may modify this system of war, since reconnaissance no longer implies loss of time?

"French war, on the other hand, depends first for its success on the receipt of information of the enemy's line of advance, and deployment, so timely and accurate, as to admit of a plan being formed. Secondly, French war depends for success on the assembly of its army in a formation which admits of manoeuvre to deliver a blow, and on the existence of an advanced guard which shall hold the enemy and so create an objective for the blow. Thirdly, it depends for success on a timely offensive by the whole force directed by the commander-in-chief; and, fourthly, it depends on an able commander-in-chief and an able advanced guard leader.

"The great danger of French war is that, owing to the insufficiency of intelligence, or to its arriving too late to be of use, a commander will postpone striking with his main body until the pressure of German envelopment has deprived him of all power of manoeuvre.

"Now, given two armies of equal efficiency and equal strength, one fighting according to German doctrine and one according to French doctrine, which would derive the greatest advantage from aeroplanes?

"The answer is, I think, 'The side that could make best use of his information.' As far as German war is concerned, I think it stands to reason, from the summary I have given of this system, that the aeroplane will help the commander in the following ways—

(a) It will warn him of the danger of impending defeat in detail of the columns into which his army is divided.

(b) It will verify his hypothesis as to the position of the enemy, and so to some extent prevent a blow in the air. At the same time the aeroplane will not fix his adversary for him, and so it will not preclude the possibility of a blow in the air.

"Should the aeroplane reconnaissance prove that the commander's hypothesis is wrong, the German method of war makes it exceedingly difficult for him to profit by that information by giving a fresh direction to his operations taken as a whole.





cavalry scout trying to penetrate the enemy's screen, and liable to be shot from ambush at every hedge or turn on the road, or with the infantry officer under fire walking up and down in cold blood, trying to keep a company, which is being badly hampered, from jumping up and making a bolt for it.

(d) He seemed to think that the aeroplanes would be attached to the cavalry scouts in the immediate front of the army. Of course, the rival horsemen do not usually engage; it is not their rôle, and, besides, they are under immediate control of their commanders in rear. He does not realise that the planes will be abroad before the horses are out of their lines, operating 20 to 50 miles away in flocks of varying numbers. Their pilots will be in direct contact with the Chief in Command, and will carry orders to, instead of receiving orders from, the commanders of the cavalry or any other arm.

The function of the aerial scout will be to get information. In this quest he will be impeded by the opposing fleet. On the face of it, this situation spells trouble and nothing else. The amount and value of information obtainable will depend on the extent to which the supremacy of the air is gained. It is absurd to suppose that both sides will agree that their aerial fleets are to act only on the defensive. No doubt the country (England) which finds itself greatly inferior in this respect would very much like to frame a rule that no aeroplane must cross a certain line.

(e) But the trained officer is not forthcoming in any great bulk. Every obstacle is being placed in his path. The staff officer is most backward in trying to obtain the elementary

principles of the science. He has had endless opportunities of visiting aerodromes, but failed to avail himself, leaving them to the regimental officers and the civilian aviators, whom he despises.

The fact is that the staff officer is not looking forward with pleasure to risks he may be called upon to take, risks which he considers should not be obligatory during the piping times of peace. He also knows that if he put his foot inside a flying ground he would certainly be invited to ascend without payment. He can postpone that evil day by opposing the movement, and he does it.

One must disagree also with his remarks about the civilian pilots. Considering the class from which they are drawn, there is no reason to assume that these aviators will be greatly inferior to the soldiers.

It seems fair to assume, in view of his observations, that during his service in the South African War Colonel Hunter Weston was so engrossed in his arduous duties as a Staff Officer at Headquarters that he never made the acquaintance of the South African Light Horse, Rimington's Guides, Driscoll's Scouts, Montmorency's Scouts, Strathcona's Horse, or any of the Australian Irregulars, who did all the scouting worth calling scouting throughout the war, and who were civilians to a man.

In fact, it would seem that Colonel Hunter Weston and the General Staff as a whole, have acquired their knowledge of aviation from a magazine article of two years ago.

C. G. G.

## Questions in the House.

### Naval.

(November 21st.)

1. Mr. Burgoyne,—To ask the First Lord of the Admiralty whether the hull of Airship No. 1 was accepted from the contractors conditionally; and, if so, will the conditions, if including repair of damage sustained, be enforced.

2. Mr. Burgoyne,—To ask the First Lord of the Admiralty whether any Admiralty representative took exception to the form of girder employed in the construction of Airship No. 1; and whether the design was entirely approved by the Admiralty constructors.

3. Mr. Burgoyne,—To ask the First Lord of the Admiralty whether it is proposed to publish the minutes of the finding of the court of inquiry instituted subsequent to the collapse of Airship No. 1; and whether, as a result, there is reason to believe that a successful naval airship cannot be evolved.

4. Mr. Burgoyne,—To ask the First Lord of the Admiralty whether the contractors informed the Admiralty representatives that Airship No. 1 possessed a factor of safety of 8-inch in shear; and whether it was found that the factor in shear was no more than 2½.

### Military.

(November 20th.)

170. Mr. Sandys,—To ask the Under Secretary of State for War if he will say for how long it is proposed that officers who have obtained certificates will be attached to the Army Air Battalion for instruction in military aviation. [For answer Friday, November 24th.]

171. Mr. Sandys,—To ask the Under Secretary of State for War whether he is aware that officers of the Air Battalion making cross-country flights are put to expense which, under

existing arrangements, they have to meet out of their own pockets; whether officers who made cross-country flights early in the summer have not yet been reimbursed with their expenses; and whether he will take steps to prevent this branch of practical aviation work from being restricted to officers who possess large private means. [For answer Friday, November 24th.]

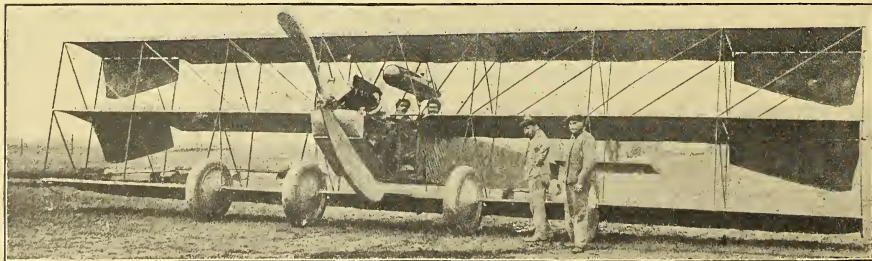
188. Mr. Sandys,—To ask the Under Secretary of State for War whether the winter accommodation on Salisbury Plain, which it was officially stated would be provided for the officers and men of the Air Battalion, is now ready; and, if so, where these winter quarters are situated. [For answer Tuesday, December 5th.]

189. Mr. Sandys,—To ask the Under Secretary of State for War whether the Army Council have come to a decision with regard to pay and allowances of officers of the Air Battalion. [For answer Tuesday, December 5th.]

190. Mr. Sandys,—To ask the Under Secretary of State for War whether it is intended to increase the numbers of officers permanently attached to the Air Battalion apart from officers temporarily attached to the battalion for a course of military aviation. [For answer Tuesday, December 5th.]

(Question not for Oral Answer. November 21st.)

4. Mr. Sandys,—To ask the Under Secretary of State for War whether the Army Council has made arrangements with civilian schools of aviation with regard to the training of selected officers; and if so, whether he can state if terms have been arranged with these schools, or whether officers who wish to pass the test and obtain a club certificate have to make arrangements privately on the understanding that if they pass the test they are to receive the grant of £75 from the War Office.



The Astra Triplane, which showed great promise in the French Military Trials. (Photograph lent by M. G. Blondeau).

# WINTER AVIATION

To pay your expenses during the winter months

FLY AT

**Brighton - Shoreham**  
**Aerodrome** November, December,  
January and February.

Brighton Season in full swing.

Passengers plentiful at paying prices.

FREE NOTICE BOARD IN ALL HOTELS FOR USE OF TENANTS.

News circulated by Exchange Telegraph Co., who have an office on the ground.

**Maximum Sunshine.**

**Minimum Fog.**

STEADY SEA BREEZES.

NO GUSTS.

NUMEROUS DEAD CALMS.

Perfect Ground. Low Rents. Living Cheap. Large pleasure-loving population. Aviators are popular. Expert Engineers, Oils, &c., are available on the spot. Large water Surface available for Hydro-Aeroplanes.

Apply: -MANAGER -

Telephones: -67 Shoreham; 4642 X Brighton.

**Brighton-Shoreham Aerodrome, Shoreham, Sussex.**

# BLERIOT

The most successful in all the great Cross-Country Races of 1910 and 1911.

## TUITION

At the Bleriot School,

INCLUDING  
ALL EXPENSES.

**£75**

HENDON.

Including Third Party Insurance,  
and all breakages, if any.

IF THE PUPIL OBTAINS HIS PILOT CERTIFICATE WITHOUT  
BREAKAGES, A SUM OF £10 IS RETURNED TO HIM.

PLEASE ADDRESS ALL INQUIRIES TO:-

**L. BLEROT, Belfast Chambers, 156, Regent St., London, W.**

Head Office for the British Empire.

Norbert Chereau, General Manager.



## AIR CURRENTS.

## Letters to the Editor.

(Crowded out from Correspondence Page.)

Sir,—I beg to call your attention to the great annoyance and inconvenience which have been repeatedly caused, since the opening of the football season, by aeroplanes flying over or near our club ground while matches are in progress. Not only are the spectators disturbed by these interruptions, but one of our own fellows recently so far forgot himself as to let his attention be distracted from the game by a passing machine—an indiscretion he is not likely to repeat when he comes out of hospital—and last week a regular exhibition was actually given, not half a mile away, to the serious detriment of our "gate." Now, sir, when matters have come to this pass it is clear something must be done. Kindly use your influence to prevent aviators flying near any club ground while a match is taking place, otherwise we shall have to ask the Home Secretary to forbid flying on Saturdays altogether.

J. SCRIMGOUR, Captain,  
Hammerham Heathens F.C.

Sir,—I have read with much interest your account of the way in which a certain aviator entertains himself with music while flying, and it occurs to me that you might like to hear of a device I have adopted, which has the advantage of leaving the user free to attend to the controls. Having noticed that the piano wire stays of my machine emitted a musical note, I have had them tuned in a beautiful series of progressions, so arranged that, with the wind on the port bow, they vibrate in the harmonies of *Si Oiseau j'étais*, while a breeze striking the machine in the opposite direction, viz., on the starboard quarter, produces the touching and appropriate melody of *Alone on the Raft*. I shall be pleased to correspond with any aviator who would like to try the idea, and may add that a friend who formerly had a great deal of trouble with his engine has found it run quite smoothly since I tuned his machine to *Il Moto Continuo*.

RACHIMANINOFF RUBINSTEIN.

Sir,—People are asking "Why has Winston gone to the Admiralty?" The reason is plain. Seeing the strides aviation has made under his direction as Home Secretary, who could be better fitted to undertake (personally if need be) the reconstruction of the lamented Barrow dirigible? We have the right man in the right place for once.

SENEX RUSTICUS.

Sir,—Whilst complimenting you on your otherwise admirable journal, I feel it my painful duty to point out one blemish. I refer to the deplorable waste of space and printing ink which occurs every week under the heading of "Air Currents." Surely there are plenty of comic papers in existence already for those whose frivolous minds find amusement in such trivialities. This sort of thing may go down very well with mere aviators and people of that kind, but to the serious student of aeronautics, pursuing his labours by the aid of the midnight gas-mantle, with *The Calculus for Engineers*, *Flying Tea-kettles in Japanese Folk-lore*, and *Model Aeroplanes: How to Make and Break Them* spread on his desk before him, and a silk handkerchief steeped in eau de Cologne round his throbbing brow, aviation emphatically is no joke. With tears in my eyes I beg of you, sir, to remove this defect from future issues and to substitute, say, a series of articles on quadratic equations, or something equally helpful to practical men.

SOLENN 'UN.

Dear Mr. Editor,—Having taken your book since the first number, I thought perhaps you would give me a little advice. I and another young lady were walking on Tooting Common yesterday when an airman came flying over, and a gentleman told us it was Mr. Olaf St. Ivel. We have seen his photo in *Chatty Chips* and think he is too lovely for anything. He was so high up we could only just see the machine and not him at all, but we both waved as hard as we could, and a few seconds afterwards something fell down out of 'he sky and hit on the brim of my hat. It was the silver paper and outside wrapper from a packet of Nottingham's Nut Chocolate rolled up into a ball, and I am certain he meant it for me, but I have looked in the *Language of Flowers* and cannot see anything about Nut Chocolate, so I do not quite know what to do. Do you think he would like me to send him my

GLAYS.

M. L. E.

## "What to do in Emergencies" for Aviators.

If your engine gives out when you're flying about  
O'er a greenhouse on someone's estate,  
Jump clear to the ground from the debris around  
And make a bee-line for the gate.  
But if ere you vanish the owner appear,  
And all other methods should fail,  
It well to allude to the time of the year  
And the frequent recurrence of hail.

If when flying at night you think everything right,  
And so become careless, my friend,  
A chimney appears, and, alas! interferes  
With the works, and you have to descend,  
Remark as you fall through the sooty abyss  
You are old Father Christmas and that  
You have made a mistake in the date,—after this  
Make a neat spiral glide on the mat.

If your friend should come down to your hangar from Town,  
And you start up the engine for show,  
When with action that's swift the screw comes adrift  
And hits him a bang in the eye, you know!  
If there's anything left of the gentleman, well,  
Just say, as you pull him out straight,  
That ideas on the thrust that's required to propel  
Are not what you call up-to-date. D. M. H.

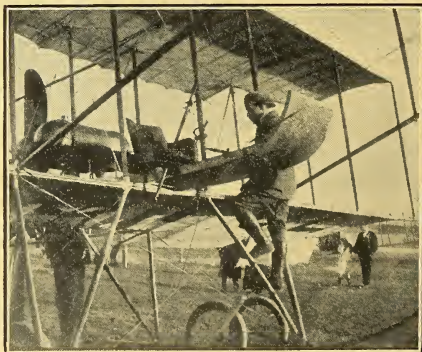
From *The Irish Cyclist*:—"Mr. Planes, the boss century cyclist, has covered 254 hundreds since January 1st, and is still going strong. Looks like a case of the cycle Planes beating the aeroplanes."

It has been suggested by a correspondent that it would have been better for the finances of the Army Air Battalion if the *Alpha* airship had been the *Omega*. Perhaps, however, this title will be given to the successor of the *Delta*.

Girlen (listening to a heated discussion between constructors as to the merits and demerits of wooden and steel aeroplanes):  
"Oh, I shouldn't like a wooden machine, because it would stretch when it got wet."

During the recent bad weather, when the ancient custom of partaking of a "final" drink was revived (not only in aeronautical circles), the "last one" has become known as "the Dunne." For the benefit of historians and etymologists who may not be familiar with flying machines this means that the last drink is intended to have a naturally stabilising quality.

Mr. W. B. R. Moorhouse has been delivering boots by aeroplane. Some souvenirs of his feats?



"Climbing Up the Golden Stairs"—A fancy portrait of M. Jullerot mounting his Bristol on the way to fame and fortune.

# THE GRAHAME-WHITE AVIATION CO., Ltd.

(First United Kingdom Aerial Mail Carriers),

*Proprietors of* **The London Aerodrome, Hendon, N.W.,**

**Invite** MANUFACTURERS, AVIATORS AND EXPERIMENTERS  
TO INSPECT OUR AERODROME, HANGARS & WORKS.

. . . IT IS . . .

to your **ADVANTAGE, INTEREST and**  
**PROFIT** to make your Headquarters at Hendon,

Where the hangars are of the newest design.

Where the rents are reasonable.

Where you are only  $6\frac{1}{2}$  miles from the Marble Arch.

Where you have a circuit of  $2\frac{3}{4}$  miles.

Where there are no unnecessary restrictions.

Where we have the latest and most up-to-date machinery.

Where we will construct to your designs and carry out your repairs.

Where we will save you both time and money.

## LEARN TO FLY AT OUR SCHOOL.

**We have the Best Pilots, Best Machines,  
Best Mechanics and Best Facilities,**

WITH SPECIAL READING & DRESSING ROOM FOR AVIATORS AND PUPILS.

Restaurant on Ground Open from 7 a.m.

---

DON'T DELAY, WRITE NOW FOR TERMS AND PARTICULARS—

**THE GRAHAME - WHITE AVIATION CO. LTD**

Phone—  
KINGSBURY 221

**THE LONDON AERODROME, HENDON**



## The Royal Aero Club Meeting on Army Aeroplanes.

A meeting of aeroplane and aero engine manufacturers was held in the R.Ae.C. on Tuesday, with Mr. Roger Wallace, K.C., in the chair, to discuss the attitude of the War Office toward British constructors. After considerable discussion, the following resolution, proposed by Mr. H. G. Burford and seconded by Mr. Howard Wright, was carried *unanimously*, but not absolutely unanimously, as the representatives of one or two foreign constructors naturally refrained from voting:—

That the Royal Aero Club of the United Kingdom respectfully requests that the Under Secretary for War will receive a deputation from the Club with a view to pointing out the advantages of Government support to British aeroplane constructors. It is thought that, in view of the considerable time which must necessarily elapse before a competition for a prize can be decided, the Under Secretary should be requested in the meantime to consider the advantages to the Government, as well as to British industry as a whole, of placing conditional orders, with such British firms as are willing to accept them, for an aeroplane or aeroplanes to fulfil the requirements of the War Office; the conditions being that delivery will not be accepted unless the planes carry out the specified tests."

A committee was then appointed to deal with the question of

a deputation to Colonel Seely. An attempt was made to retain the nomination of this deputation in the hands of the committee of the Royal Aero Club, the Chairman promising that the committee would see that the right men were appointed. The feeling of the meeting was, however, naturally opposed to such a proceeding, and ultimately the following committee was formed:—

H. C. Barber, Syd. Begbie, A. E. Berriman, H. Blackburn, R. Blackburn, H. G. Burford, S. F. Cody, R. Cockburn, T. W. Clark, R. Charteris, R. Dunne, Howard Flanders, C. G. Grey, the Earl of Hardwick, Handasyde, Gustav Hamel, Martin, W. O. Manning, Frank McClean, Colonel Mulliner, J. C. Mort, Fred May, Mervyn O'Gorman, Alec. Ogilvie, Handley Page, Lieut. Porte, R.N., A. V. Roe, E. V. Sassoon, Horace Short, C. C. Turner, G. A. Wingfield, Capt. H. F. Wood, C. Grahame-White, and Howard Wright.

It was also decided that the Committee of the Royal Aero Club and the Committee of the Aeronautical Society be *en bloc* members of this Committee.

It is to be hoped that this committee will be called together immediately, for the Government's official announcement is expected in the middle of December, and obviously if any good is to be done action must be taken some weeks before.

## A Simple Method of Finding Suitable Propeller Pitch.

The accompanying diagram has been evolved in reply to a recent query as to the pitch of the propeller for a certain machine and engine.

The writer worked it out by the simple method of dividing the machine's speed in feet per second by the engine revolutions per second, and multiplying by the slip factor. As it seemed likely that others might often desire the same problem solved, he has constructed the weird-looking chart hereunder.

On looking at this closely it will be seen that it is composed of four sets of lines, viz., vertical full lines, horizontal full lines, inclined broken lines, and oppositely inclined dot and dash lines.

To find the pitch suitable for a machine it is necessary to know the speed of the machine, the revolutions of the engine, and the slip of the type of propeller to be used, then follow the following rule:—

Follow the broken line of revolutions till it cuts the horizontal line of the machine's speed, then follow the vertical line till it cuts the horizontal line of slip; from this point follow the inclined dot and dash line, which will be marked at its end with the necessary pitch.

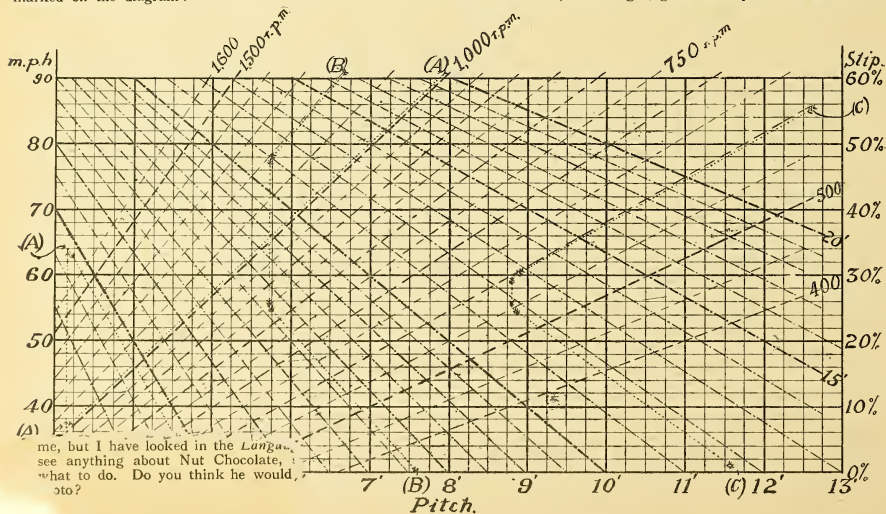
Three examples are submitted herewith, and will be found marked on the diagram:—

- For a Farman machine.—Speed, 36 m.p.h.; engine revolutions, 1,000; probable propeller slip, 34 per cent. This, it will be seen, gives a pitch of 4 ft. 10 in.
- For a Nieuport machine.—Speed, 78 m.p.h.; engine revolutions, 1,200; probable propeller slip, 25 per cent. Resultant pitch, 7 ft. 7 in.
- For a Cody machine.—Speed, 60 m.p.h.; propeller revolutions, 600 (geared down); probable propeller slip, 25 per cent. Resultant pitch, 11 ft. 8 in.

Note firstly that, when the junction of the revolution line and the speed line has been found, if the vertical line is followed directly downwards the result is the effective pitch or actual travel of the propeller through the air in one revolution.

Secondly, that the dot and dash line which cuts the bottom of the diagram at any given pitch will, if followed, give by its junction with any given horizontal slip line the travel per revolution of a propeller of that pitch for that slip.

If it is desired to find the slip of a propeller on a known machine the procedure is very similar to the first above-mentioned: Follow, as before, the broken line of revolutions till it cuts the horizontal line of speed; then follow the vertical line till it cuts the line of the propeller's known pitch. The horizontal line, to the right, gives the slip.—P. K. TURNER.



# The Week's Work.

## Monday, November 13th.

BROOKLANDS.—Pizey on Bristol up for trial with Capt. Gordon as passenger, but much too windy for school work.

HUNTINGDON.—W. B. R. Moorhouse on Radley and Moorhouse tandem two-seater up with Jolly, the ground manager, to Soaf, in very bad weather. Machine badly pitched about, but flying beautifully. Then Moorhouse up with Master Pemberton to 1,200 ft., young passenger greatly elated. Later Moorhouse up on R. and M. single-seater for twenty minutes at 6,300 ft., disappearing behind clouds. Roberts Bruce rolling on school machine.

## Tuesday, November 14th.

BROOKLANDS.—Kemp on Flanders doing straight flights to test new engine, a Green 60-80, which promises well. Green engine hitherto used was three years old, and, though giving big power, is not so up-to-date in detail as new one. Bell on Deperdussin out testing for short flight. Weather too bad for real flying.

HENDON.—Almost incessant gales have prevented flying during week, and it was impossible to take machines out, except early on Tuesday morning. Even then stiff breeze, but Capt. Loraine anxious to get some practice in wind, and made several fine flights on Valkyrie Racer, handling machine splendidly. Lieut. Parke, R.N., also out for one circuit on Grahame-White biplane.

## Wednesday, November 15th.

BROOKLANDS.—Kemp out testing the rebuilt *Vickers II.*, but only for straight flights, as wind blowing a gale. Bell also out for one very uncomfortable circuit on Deperdussin brevet machine. First appearance of new Martin-Handasyde, piloted by Sopwith. Lifting well, but only doing straight lines for test purposes.

HENDON.—Lieut. Parke up for two minutes in afternoon.

## Thursday, November 16th.

BROOKLANDS.—Raynham on Avro-Viale out doing test flights in straight lines, engine apparently doing well. Sopwith out again on Martin-Handasyde, and, after some straights, did a circuit, machine flying nicely, but dropping on turns, probably owing to pilot deliberately diving because of wind.

LANARK.—Flying up to Thursday impracticable owing to storms. However, much work was got through in hangar, and pair of spare Blériot wings are nearly finished. Weather this day splendid for flying, and excellent day's work was done. Warren and Jackson each took turns on school Blériot, Warren doing circles and Jackson half-circles. Warren shows excellent knowledge of machine and engine, being an engineer by trade, and should turn out a very good flyer.—H. O. WALSH.

## Friday, November 17th.

BROOKLANDS.—Weather too bad for anything.

BARRHEAD.—Mr. Harry Tate, the eminent comedian, has joined school and had lessons nearly every day during week. He was appearing in his "Flying" sketch at Glasgow Empire on Friday; he had so far progressed as to do some short "straights" during lull in extremely "anti-aviatic" weather. Mr. Tate has arranged to continue lessons on his next visit in January, but will spend every possible Sunday in Barrhead that his engagements permit. Mrs. Lucking took her first rolling practices.

## Saturday, November 18th.

BROOKLANDS.—Fleming on Bristol up with Major Benwell, latter in control. Then with Capt. Gordon for short flights, reaching landing. At midday flying stopped by wind and rain. Altogether the worst week on record. Nothing but gales and rain.



Mr. Busted, the crack Australian Bristol flyer, now flying well on the Bristol Monoplane.

THE PLAIN.—Jullerot up on No. 66 Bristol, just arrived, and had been assembled on The Plain. Machine working perfectly on maiden trip, no adjustments being necessary, which shows high standard of excellence characteristic of Bristol construction from the outset is being maintained. Hotchkiss then took Lieut. G. T. Porter, R.G.A., new pupil, on machine No. 43, after which Jullerot took same pupil up on No. 66. Flying done in thick fog, rain falling whole time. In afternoon strong wind sprang up. Dozen or so officers and civilian pupils still at Salisbury Plain School, and most ready to pass their tests, only awaiting improvement in weather to qualify.

FILEY.—Owing to weather very little flying done. Oxley was out doing fine flights on big passenger machine fitted with Renault motor, taking pupils as passengers. Machine behaved perfectly and flew very steadily.

SHOREHAM.—Things considerably brighter here. Mr. Chanter expects to be out this week. Lieut. Porte, R.N., on passenger-carrying Deperdussin, also likely to be out. Weather improving.—C. A. C. WINCHESTER.

BARRHEAD.—Mrs. Lucking shows excellent promise; she should easily be "No. 3." Capt. Forsyth and Lieut. Warrand both making excellent progress. Weather seems to have dropped and good work is expected this week. Caledonia monoplane, of Blériot type, is unqualified success, and big things are expected.—F. NORMAN.

## Sunday, November 19th.

EVERYWHERE.—More wet, and more wind.

## Eastchurch Notes.

In spite of the weather there has been a good deal of flying. Mr. McClean was out frequently on the Short twin-engine



Two views of the Brighton-Shoreham Aerodrome, showing the open nature of the country.



machine, flying in very gusty winds, and Lieut. Sanson was also out practising on the Blériot. On Saturday, November 11th, Lieut. Sanson did some excellent flying on the Blériot, at a height of some 300 or 400 ft. At the same time McClean was flying on the Short twin machine, and during the afternoon took up four passengers, viz.: Mr. and Mrs. Maurice Bader, Mr. Ridley Housman, and Dr. W. J. S. Lockyer, all of whom were much impressed with their ride in the comfortable nacelle of the twin-engine machine. Mr. Jezzi was also out on his miniature biplane, making flights at a low altitude. At one time Jezzi was flying close to the ground immediately below Lieut. Sanson, who was flying on the Blériot at an altitude of about 70 ft. The two machines raced neck and neck, and the monoplane had apparently only a little advantage in the way of speed. Lieut. Dunne also made several short flights on the Dunne biplane during the afternoon.

#### Mr. Cody's Offer.

Following on the Government's decision to hold a competition in England for the purpose of discovering the most suitable aeroplane for war purposes, Mr. S. F. Cody has stated that he is pleased that at last he would be enabled to demonstrate officially the capabilities of his machine, which, he claims, was capable of doing all that was asked by the French Government at the recent tests at Reims. Mr. Cody says he would make no charge for the tests, nor would he accept any prize if he were successful in every detail. On the other hand, if he failed in more than 30 per cent. he would be prepared to pay the expenses of the official observers for having wasted their time.

Knowing Mr. Cody and his machine, the writer does not hesitate to say that it could pass the French military tests with ease as it stands. Also, his "Circuit" machine is a better, faster, and safer machine than any French biplane which has passed the French tests. But if Mr. Cody were to pass these tests, all of them, every day for a month, he would have practically no chance of selling a similar machine to the British Army—at any rate, while the present state of disbelief in all-British machines prevails in the Air Battalion and Aircraft Factory. Cody is too all-British, and knows too much about aviation to be a *persona grata* in certain quarters.

#### Aeroplanes for Territorials.

The *Morning Post* says: "The London Ballou Company of the Territorial Force have been offered the use of two aeroplanes for the purpose of instructing members in aviation. The machines, which are Short biplanes, are at the Royal Aero Club grounds at Eastchurch, Sheppey, and the leader—a prominent member of the club—has undertaken to see after their housing and maintenance. It is hoped that a large proportion of the sixty-two members of the company will be enabled to gain the higher certificate of the club. Already fourteen have volunteered for a course of training, and the first pupil will start on his course in a few days. Those who cannot afford the time will be taken down to Eastchurch at week-ends to be trained in the handling and care of aeroplanes and their motors." Is Mr. McClean qualifying for the post of First Lord of the Airmilitary?

#### The New Blackburn Three-Seater.

Mr. Hubert Oxley has recently had his new Blackburn passenger machine out. This is fitted with a Renault motor, and has just been completed. He made one or two straight flights, taking the pupils as passengers, at its first appearance. Next day he was again out trying the same machine, and on the Saturday he made further trials. Several short flights were made with passengers. The estimated speed of this machine is 65 miles an hour when fully loaded, being rather speedier than the single-seater Gnome machine.

#### Aeroplanes for India.

Though the Indian Government has as yet taken no direct steps towards the formation of an Aeroplane Force, yet an immense amount of interest is taken in aviation by the Army men in India, from the highest ranks downwards, as is proved by the fact that so many officers in the Indian Army, or in British regiments in India, have learned to fly, their numbers being out of all proportion to those of the British Army at home. It is, however, fairly certain that some official move will be made before long.

Nevertheless, without waiting for this official move, there is likely to be quite a good deal of flying on their own account done by soldiers in India in the near future. The first officer to obtain permission to take an aeroplane to India is Lieut.

H. H. Harford, who left to join his battery of Field Artillery at Kurachi on Monday of last week. Mr. Harford, who took his certificate in excellent style at the Bristol School at Brooklands the previous week, has bought a Bristol biplane, which is now on its way to join him at Karachi, and on its arrival he hopes to be able to make himself and his machine useful to the authorities by giving demonstration flights whenever and wherever his other duties permit. Major Benwell, of the Scinde Horse, who has also been learning to fly at the Bristol Brooklands School, and is returning to India in a few days, hopes to find time to join Mr. Harford in his aeroplane work, and between them they should be able to do excellent service, for they have spent a very big portion of their leave at Brooklands, and know considerably more about flying than do many of those who are supposed to be authorities on the subject.

It is much to be hoped that their sporting venture may prove to be the beginning of a big Indian military Aviation school, and that the authorities at headquarters will give them every encouragement.

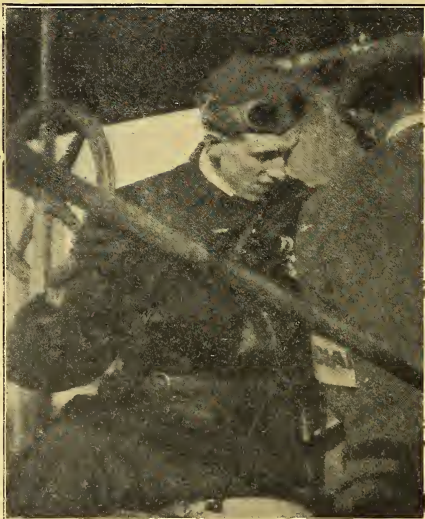
#### A Club for the Brighton-Shoreham Aerodrome.

It must be gratifying to the proprietors of the Brighton-Shoreham Aerodrome to find that they are being supported vigorously by the local people in the county of Sussex by the formation of a club, with a view to erecting a club-house on the Aerodrome.

It is stated that Viscount Curzon has kindly consented to be president, and a large number of leading local gentry, including Lord George Neville, J.P., D.L., Sir Theodore V. S. Angier, Mr. David Sassoon, Mr. Thomas-Stanford (Mayor of Brighton), Lieut.-Colonel W. B. Gentle, Mr. T. H. Ionides, and others have consented to become vice-presidents.

The idea with which this club has been formed is to foster aviation in the county, and to encourage the promoters of the aerodrome at Shoreham in every possible way by their support. It is stated that there is already a very considerable membership, and it is proposed to allow the first 500 members to be admitted without an entrance fee, at an annual subscription of two guineas, which entitles every member to free admission at all times of the year.

The club intend to have a club-house which will provide bedroom accommodation for aviators. The committee of the club are said to be already in negotiation with various influential persons with a view to organising a competition during the Brighton winter season for handsome cash prizes.



The late Eugene Lely, from a photograph kindly lent by Mr. James Radley.

# MULLINER

LONG ACRE, LONDON, &  
NORTHAMPTON, LTD.

Aeroplane Works: VARDENS ROAD, CLAPHAM JUNCTION, LONDON.

AEROPLANES BUILT TO CLIENTS' OWN DESIGNS.

Sole Agents for **NORMALE PROPELLERS**

The Most Efficient  
Propeller in the World.

Used by M. Beaumont, in winning the Paris-Rome Race, the European Circuit, and the "Daily Mail" Circuit.

TELEPHONE: 1987 BATTERSEA.

TEL-GRAMS: "AERO RIET," LONDON.

# WALKYRIE

## MONOPLANES.

THREE TYPES.

40-80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES.

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

QUOTATION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

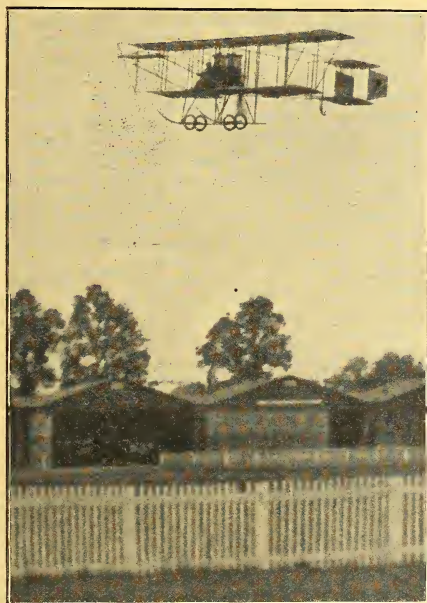
**THE AERONAUTICAL SYNDICATE, LTD.,**

ESTABLISHED MARCH, 1909.

COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.



# E. N. V.

ALL BRITISH AVIATION MOTORS.  
**MANVILLE PRIZE of**

**£500**

Brooklands Racing Season  
Aggregate Prize of

**£150**

Brooklands Duration Prize,  
Oct. 4th.

**£30**

All Won by C. Howard Pixton, Esq.,  
using a 60 h.p.

**E. N. V.**

Address all enquiries to—

**The E. N. V. Motor Syndicate, Ltd.,**  
4, Hythe Road, Willesden, London, N.W.

# E. T. WILLOWS LTD.

STOCK  
DIRIGIBLES

"City of Cardiff" Type, to carry 4, £900 complete.

New Light 2-Passenger Model - - £370

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM





## British Birds from the Aviator's Point of View.

This has no claim to be a scientific article, or to advocate any new principles in aviation; it is simply a study of a few common British birds, considered as aviators. To prevent any invidious discussion among the inhabitants of aviaries, I am taking them simply in alphabetical order, so that no reasonable bird shall have cause to complain.

The first in this order is the Duck class, which contains all the wild duck, the geese, and the heron (note that when I refer to the duck family I mean only those birds which fly in the same manner; I am not considering the naturalist's classifications). These are all distinguished by heavy loading, low aspect ratio, and generally very inefficient flight. Their main idea when flying is simply to get there; they fly very high and very fast, and in a dead straight line. They are very strong, and use terrific power in flying. Their gliding angle is very bad, and their stability not very good; nevertheless, they are very effective as flyers, for they carry their weight, which is fairly large, at a very high speed. The ducks, it should be noted, believe in high-speed, short-stroke engines, whereas the herons run their engines slower.

The next outstanding bird is that of the Fly-catchers, which, in their ordinary flight, adopt the method which will be referred to later when dealing with the sparrows, etc. They possess, however, one qualification which is not often found, that of hovering in one spot; this is done by increasing the angle of incidence until they practically helicopt. This, of course, requires great power.

It is in this respect that the bird, as such, has such a great advantage over the aeroplane. Even a man, horribly inefficient as he is, must yet be considered useful as a prime mover. This is because the living organism stands out in its enormous overload capacity. The petrol engine is bad in this respect; in fact, the best engine, from this point of view, is the electric dynamo or motor, which will work on an overload up to 200 per cent., when it usually burns out. Yet the horse, whose normal full working load is about two-thirds of a horse-power, can be safely overloaded for a short time up to more than 1,000 per cent.

Applying the same principle to aviation, we find that while an aeroplane with a normally powerful motor can rise at about one in twenty by overloading the motor to its full capacity, the bird, although it is less efficient as a flyer in most cases, can by overloading get ten times its normal power, and can rise almost vertically.

This point is singularly well illustrated in the next two classes to be dealt with, viz., Game-birds and Larks. The former have abandoned all attempts at lateral stability, flying, as they do, with a marked negative dihedral, calculating from the average angle of the whole stroke; they never attempt any trick flying, and trust to their own skill to keep right side up in ordinary performances. Of course, this inverted dihedral returns them some of the efficiency which they lose through their low aspect ratio. Like the ducks, they are heavily loaded, and fly purely for business purposes, and not as a hobby.

The Lark is alleged, especially by those of a poetic temperament, to be just the opposite. He is supposed to fly and sing through sheer *jote de vivre*. As a matter of fact, the lark sings from a second place only to the robin as a vulgar and pugnacious little beast. His sole virtue, morally speaking, is that he has not got the robin's horrible cockney accent. As a flyer, he is fair to medium, his point of excellence being his success as a helicopter, wherein he excels the fly-catcher, in that he can not only remain poised but can also rise almost vertically. This performance again is no expression of a lofty soul trying to reach heaven by the direct overland route, but is due to the fact that the lark, like the landowner, considers all the air above his nest and the surrounding hundred yards or so to be his own private property, and he spends most of his time in rising vertically above it and informing the neighbourhood of the fact with all the persistence of a *nouveau riche* who has bought his way into county society.

The common Pigeon must be given a place on the list, although he has no particular merits in his flying. The homing variety can, however, claim to have developed to its fullest extent the art of flying across country without either map or compass. In this point he is very fortunate, and it is the obvious duty of some ultra-modern scientist to experiment upon aviators by injecting serums produced from various portions of homing pigeons. Another variety of pigeon, the tumbler, deserves mention as an exhibition flyer. His trick of repeatedly turning fore and aft somersaults has never been excelled even by the smartest Yankee circus flyers. Incidentally, the ordinary wood-pigeon has one habit which the really

good aviator scorns. He always switches on his engine when on the point of landing.

Another exceptionally clever trick flyer is the Plover. At Brooklands, of course, the plovers perform their tricks on windy days simply as a means of annoying weather-bound aviators, but why they do it elsewhere has not yet been discovered. They are blessed with wings whose tips are practically square, and are very little tapered. Thus they have immensely warping power, and the only result is that which is so plainly observable in the Wright machine: they can take immensely sharp corners and do the most wonderful spiral *polo plané*, since their enormous lateral control enables them always to right themselves if caught by a gust at the critical moment.

The Rook is the second best all-round flyer in the United Kingdom. His gliding angle is magnificent, about one in twenty-five or more, and although his wings are almost pointed they are more or less V-shaped in plan-form, which gives him fairly powerful control. He is a most economical flyer, gliding always when he has the chance; his loading is low considering his size, and his aspect ratio very high. Of all the inland birds, he is by far the most instructive to watch, for his method of using favourable air currents and his contemptuous treatment of *remous* are a joy and envy to any pilot. He is also thoroughly capable of long-distance flights when necessary, and is singularly regular in his flying, regardless of weather. In country districts where there is a rookery near, the rustics invariably set their ancestral timepieces by the time of passage of the rooks to and from their feeding grounds, which seldom varies more than a few seconds from day to day.

The Seagull, which is the next up for treatment, and the Swift and his allies, are the only birds which in any way approach the rook. Both of these, however, suffer from "trick-flyer's megalomania," which continually leads them to attempt feats which are just a trifle beyond their capabilities, so that they are perpetually saving themselves, by the skin of their mandibles, from a nasty death. Nevertheless, they are very instructive to watch.

Both have arched wings and a slight dihedral, thus obtaining efficiency and stability; they are both very fast on the rare occasions when they fly straight, and they both have a magnificent gliding angle. Their loading is light and their aspect ratio very high. They both use their tails to a large extent for steering purposes, though, like most other birds, they get their elevation by swinging the wings backwards or forwards. Both also appear to be tireless (in which statement I am not referring at all to their chassis arrangements, which are excellent, though rather difficult to adapt.)

It is a great come down from these artists in flying to the Sparrows, Finches, etc., which are, as flying machines, only one degree above the domestic hen and duck and two degrees above the ostrich and apteryx. Owing to their inefficiency and weakness, they seem unable to attain any height above 40 or 50 feet, and to get to this height necessitates the use of about 15 sparrow-power per bird, so they overload themselves severely to keep up at all. Their method of progression is very bad, as they have a heavy "phugoid" of about 15 feet from crest to crest. They work fearfully hard on the upward curve and then attempt to glide, apparently discovering anew at each attempt that, since their gliding angle is about one in one, the best thing they can do is to start flapping again.

An article such as this would be incomplete without at least some mention of the presumably extinct terodactyl. Unfortunately, this bird, beast, or fish, whichever it may be, is very shy and resents espionage. Since its span is about 20 feet, and it has a large mouth full of aggressive teeth, one is obliged, to some extent, to respect this foolish prejudice, and so must confine one's remarks to generalities. It would appear to be an excellent flyer in many ways, but probably, like the bats and other membranous winged creatures, it suffered from an inefficient wing camber, and was probably inclined to "pancake." This may, perhaps, in combination with its rather weak chassis, have accounted for its early extinction.

The writer hopes in a further article to deal with such of the insects, lemurs, fish, flying pigs, and other animals as employ more or less the true aeroplane principle, as well as the flapping wing and helicopter methods. One case will need an article to itself: this is the case of a flight right outside our atmosphere, which, therefore, must have been accomplished by the use of a negative gravitational force—I refer to the flight of the *com mentioned* in that old rhyme commencing "Hey diddle diddle": which beast, we are told, used the moon as a long-distance pylon on its famous attempt on the universal distance record.—P. K. TURNER.

**£750**

WITH 60-80

**Green Engine**

... THE ...

# "Flanders" Monoplane

TUITION £75 INCLUSIVE

Pupils taught on monoplane with double control.

£10 RETURNABLE IN EVENT OF NO DAMAGE.

L. HOWARD-FLANDERS &amp; CO., Brooklands Aerodrome, Weybridge.

**MICHELIN £500 TROPHY WON ON A**

The Green Engine, always to the fore when records are to be made, has again proved its undoubted superiority. Cody—using his new type machine fitted with a 50-60 h.p Green Engine—flew 261 miles 800 yards and thus secured this blue ribbon of the air. YOU cannot do better than to follow the lead of the pioneers.

Write for particulars to

**The Green Engine Co.,**

Sole Licences under Green's Motor Patents Syndicate Ltd.,  
55, Berners Street, London, W.

Makers for the Patentees: THE ASTER ENGINEERING CO., LTD.

# GREEN

## ALL-BRITISH

# AERO

# ENGINE

F.H.G.

## Special Offer of

# TWELVE <sup>35-h.p.</sup> GREEN 'Avro' Biplanes or Monoplanes

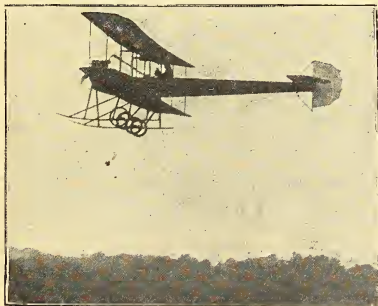
at **£400** each

Complete for Passenger carrying.

Regular Price £600.

**THE MACHINE**

The "Avro" Biplane is admitted to be Britain's most successful aeroplane. More certificates have been won on the "Avro" than any other All-British machine. :: Flies faster with lower horse power than any other machine in the world.

**THE ENGINE**

is the premier aero engine of British make. Unapproachable for reliability. The Green Engine was the only British Engine to finish the Circuit of Britain with all parts :: sealed and intact ::

**This Offer Expires November 30th**

WRITE AT ONCE TO—

**A. V. ROE & CO.,**

The Aviators' Storehouse, BROWNSFIELD MILLS, MANCHESTER.  
Telegrams: "Triplane."

Telephone: 698 Central.



## Mr. Farman on British Manufacturers.

The following is a translation of a letter received on Monday from Mr. Dick Farman:—

"Sir,—I read your articles with interest, and I notice that you continually insist on two things:—

"1.—The fastest machines possible.

"2.—Machines of English construction.

"So far as rapid machines are concerned, I am quite in accord with you, so long as the machine is in the air, but this speed becomes a danger when it is necessary either to land or start.

"If you are sincerely seeking to develop aviation, believe me, you will insist on safety at any price, and in consequence will not insist on machines which are too fast. Do not forget that every fatal accident does more harm to aviation than a whole series of the finest performances. What one should look forward to is the making of aviation a sport possible for all young people.

"So far as the construction and fitting of machines is concerned, I believe, equally, that you are wrong, for the moment, in insisting on the machine built in England. The Minister of War should, above all, procure machines as good as, or better than, those employed by other nations, without bethering himself about whence they come, and surely you will admit that it will be a great error to order all his flying machines from the British industry, which is manifestly behindhand. Let him favour the national industry by creating national competitions; nothing is more natural. But to demand that a Government shall favour this industry by ordering machines clearly inferior, *for the moment*, is anti-patriotic, and it is to my mind acting even against the interests of aviation, which actually should have no country.

"Accept, Sir, the expression of my distinguished consideration.

"(Signed) D. FARMAN."

### The All-British View.

Mr. Farman's letter, coming as it does from the brother and partner of one of the great pioneers of aviation, is naturally of considerable interest. So far as fast machines are concerned surely Mr. Farman will not argue that in actual warfare any of the biplanes which passed the tests for the French military trials would be in any way safe if, while in the air, it was attacked by a monoplane of the Nieuport or Deperdussin type, for obviously the monoplane could climb rapidly above the biplane, and one of the passengers could shoot the pilot of the biplane practically at his leisure. Or an even simpler method would be for the faster machine to dive across the front of the biplane and upset it with its wash.

It is true that in the newest Henry Farman's step forward has been made, and, by setting the pilot and passengers so far in front, the possibilities of a tail dive has been diminished, but the tail apparently still carries considerable weight, and as the machine is comparatively slow it would naturally be considerably more in danger from the back-wash of another machine than if it were faster. Further, the faster the machine is the less chance there is of it being hit by rifle fire if it should be compelled to come down low when scouting.

### The French Military Trials.

Last week the weather was for several days too bad to allow of any successful efforts for the final test in the French military trials, but on the 13th it was better, and some fine results were obtained.

Weymann, on his Nieuport, was as more or less expected, was an easy first over the distance, having covered the 300 kilometres (187 miles) in 2 hours 36 mins.; i.e., he kept up the speed of 72 miles per hour for nearly 200 miles.

Prévost, on the 100 h.p. Deperdussin, who was classed second on this attempt, had a piece of very hard luck. He started at a great speed, but, unfortunately, lost a great deal of time in returning, owing to the loss of his map at Amiens, which caused him to lose his way. He actually lost half an hour, and thus showed an average speed of 57 miles per hour. Deducting the time lost, his speed works out at 67 miles per hour. As a matter of fact, he has exceeded even this latter during the eliminating trials, and he hopes to improve his time considerably on the third and final trial; but, in any case, the Deperdussin is practically certain of the second place.

Védrines, the Deperdussin second string, went round part of the course "for a canter," as *L'Auto* puts it, in order to learn his way, so that he will probably do well at the third trial.

Further still, for war machines, speed in operation is everything; ten minutes' difference in the time in which a despatch is received, or the report of a scout is handed in, may make all the difference between losing a battle and winning it.

Though I was not at the French military trials, I am told by several experienced aviators who were there that while the Nieuport and Deperdussin monoplanes shot off the ground with a run of a few yards, all the biplanes lumbered along for a considerable distance before they were able to leave the ground, and this alone should, for military purposes, prove the superiority of the fast machine, for the military aviator will be forced to get out of small fields where the bigger and slower machine would be useless, and I can quite imagine that it will actually be necessary for army aeroplane sections, when operating in rough country, to carry launching machines in order to get their machines off the ground at all. I quite agree with Mr. Farman that, purely for pleasure flying, a slow, comfortable machine may be preferable, but such a machine cannot be flown with safety in any wind except by an expert, and it is likely to be useless for military purposes, except against savage tribes who do not possess aeroplanes.

I deny absolutely that the British industry is manifestly behindhand, or that British machines are clearly inferior as Mr. Farman states. On the score of pure efficiency for engine power no French biplane has ever been turned out to touch the Avro, and the type is now being reproduced by such an important firm as the Astra Company. Even Mr. Farman himself has gone so far as to build a biplane without a front elevator and with a non-lifting tail, though he still prefers to put the pilot in front of everything, instead of the engine, which, I take it, is more a matter of taste than principle.

So far as actual construction of the ordinary biplane type of machine with a lifting tail and front elevator is concerned, I believe that an impartial judge of construction will admit that the Bristol, Short, and Howard Wright biplanes are superior to almost all French biplanes of the same type, and undoubtedly such machines fly quite as well as their French prototypes. So far as monoplanes are concerned we have in the new Bristol, the Vickers, the Flanders, the Blackburn, and the Radley and Moorhouse monoplanes in every way worthy to compete with the Blériot, Deperdussin, R.E.P., and Antoinette, both on points of construction and of speed for power.

Let it be granted at once that so far as big cross-country flights are concerned we have not done so much in this country as in France, but the chief reasons are: (a) We have only about one-fifth as many pilots; (b) we have not one-tenth as much money to spend on flying; (c) our climate does not permit of so many hours flying during the year as does the climate in France; and (d) the topography of England is all against cross-country flying, for the average cross-country flight in France, owing to the way in which cultivation is carried on, and to the enormous flat plains available, is really nothing like so dangerous as flying round the average aerodrome in England. Therefore, taking all things into consideration, it is fair to assume that the British constructor is able to hold his own with anyone.—C. G. G.

Fischer, Barra, and Renaux also completed the course, although, of course, they are hopelessly outclassed by the monoplanes on the point of speed, quite apart from their possible other disadvantages. It is, however, another feather in the cap of the Renault motor.

Frantz, on the Savary, also completed the course, which is distinctly a matter for congratulation, seeing that the machine has been more or less universally despised.

There now only remains the third attempt allowed for this final trial, in which, be it noted, Brégi and Moineau, on the Brégiets, who were disqualified on technical points in the eliminating trials, will take part unofficially, to show that, in spite of ill-luck, the Bréguet machine is worthy of attention in the placing of Government contracts.

The actual times of the six pilots who completed the course are as follows:—

Pilot.		h.	m.	m.p.h.
1. Weymann ... ..	...	2	36	72
2. Prévost ... ..	...	3	15	57.5
3. Fischer ... ..	...	3	33	52
4. Barra ... ..	...	3	56	47.5
5. Renaux ... ..	...	4	04	46
6. Frantz ... ..	...	4	24	42.5

## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

## Compasses.

Sir,—I entirely concur with the remarks made by Mr. Clift regarding the inaccuracy of the method I suggested for finding the points of the compass. I would like, however, to point out to him that the method only professes to give an approximate position, and although, perhaps, the approximation may be rather far from the mark, it would, to a certain extent, help to put the pilot on his way. I was aware of the correct method, so ably explained by Mr. Clift, but since an aviator who forgets his compass is hardly likely to provide himself with a pelorus, a nautical almanac, and other of the impedimenta of navigation, I did not consider it worth while mentioning it. As a matter of fact, if the aviator possesses a map, which he would require to find his latitude, he ought to be able to pick his way by landmarks.

One very important item in which the compass fails is the matter of side-drifting. This is very common in aerial navigation, and is a matter of importance. I have been investigating the matter for some little time, and have hit upon a simple device for giving the land speed of the aeroplane and also its speed of side-drifting, and by means of a simple sliding scale affixed to the instrument board the actual direction in which the "ship's head" must point to traverse a given course may be found. Of course, like all instruments of its nature, it is partly dependant on the notoriously inaccurate aneroid; but if the readings were taken at a considerable height (the instruments allow readings to be taken at any altitude), such as is usual across country, the effect of the incorrect aneroid would, of course, not be so marked.

If Mr. Clift, who is, I know, interested in matters pertaining to aerial navigation, would care to hear more of the matter, I shall be pleased to let him have fuller particulars if he will communicate with me.

Belfast.

J. D. NORTH.

Sir,—Has not your correspondent, Mr. E. H. Clift, rather hazy ideas of the use of Burwood's Tables of the Sun's True Bearing?

With these tables the elements necessary to enable us to find the "azimuth" or bearing of the sun are, first, Greenwich mean time, then the equation of time, and the longitude of the place of observation, from which we obtain the apparent time at place. We then take out from a nautical almanac the declination of the sun (which may have to be corrected), and with these and the latitude of the place we get the true bearing of the sun by inspection, noting, of course, whether it is a.m. or p.m., and reading from north to east or west as the case may be. I have grave doubts whether an aviator could manage all this, but I am sure that the pelorus would be beyond him when flying. I suggest that if he gets the sun's true bearing in this way he should use a plain compass card marked with points and degrees, and, knowing the sun's bearing, he will be able to get a sufficient indication of the course he is making.

But Burwood, the Nautical Almanac, a good pocket chronometer, and a knowledge of his latitude and longitude will involve more trouble than the carrying of a compass, although, after all, even a compass may have a very nasty habit of varying its indications according to the proximity or otherwise of vertical iron or steel, and it may, indeed, insist on pointing to a lever or the engine, or may be so affected by deviation as to give a doubtful indication of direction.

Surely, too, true bearings are what are wanted; all maps are engraved true, not magnetic, so that the variation must be applied to compass bearings. At the present time the compass needle points 15 deg. 40 min. to the west of the true north point.

Compasses do not grow in fields, and are not found in the average cottage or farmhouse, so "borrowing" might be difficult!

London, N.W.

H. M. LUGGATE.

## "Aviation as a Profession."

Sir,—I am attempting in this letter to obtain the opinion of the many firms who make and sell aeroplanes on the chances of success which a young man may have if he enters the new science professionally. I think myself that, to the energetic, healthy young man who will take an interest in his work, there is a splendid chance of success in the aviation trade. Aviation is still in its young days, and there is plenty of room for young fellows of from twenty years to thirty years either as pilot instructors or makers of aeroplanes. I should like to hear the opinion of the principal aviation firms on this point, and trust that on reading this letter they may be drawn out to give their ideas and opinions to the public.

Richmond.

JERIMIAH JENKINS.

## Helping British Industry.

Sir,—How would it do to put a large tax on foreign aeroplanes coming into this country. It would certainly make other French makers follow the good example of the Dperdussin Company. It would also make the French machines a lot dearer than they are now, thereby British machines would be considerably cheaper than foreign ones, and aviators would consider British-made machines before placing their orders for foreign-made machines.

Harrow.

P. G. REED.

[That, of course, would be Protection, pure and simple, and Great Britain is a Free Trade country.—Ed.]

## "The Infallible British Press."

Sir,—I enclose for your edification a cutting from to-day's *Daily Chronicle*, which seems to be a fairly typical example of the knowledge of aerial matters possessed by contributors to the lay Press.

I quite agree with the writer that a speed of 1,100 kilogrammes is a record, but I would suggest that it would have been an improvement and would be better understood by English readers if the writer had put the speed at the English equivalent, say one ton.

I am a great admirer of your bright periodical, and anxiously await the advent of Thursday for my weekly treat. Wishing you every success.

FRED. M. BAILEY.

"Two French aeronauts, MM. Maurice Binaime and Rene Rumpelmayer, members of the Paris Aero Club, have accomplished a record balloon performance in flying from Compiègne to the Friedrichstadt district of Courland, in the Baltic provinces, a distance of 1,020 miles, in 16½ hours.

"Intending to fly to St. Petersburg from Paris in the balloon Picardy (2,200 cubic metres) they started from Compiègne at 3.30 on the morning of Sunday, November 5th. During their whole journey a violent gale was blowing, accompanied by rain and heavy mist. The temperature was unpleasantly low.

"The average height attained was 4,800 ft., and the average speed was no less than 1,100 kilogrammes. By midday on Sunday the aviators had traversed Belgium and part of Germany, and were blown out to sea over the Baltic in a driving rain. They again came inland, and at 8 p.m. decided to end their journey.

"Throwing out forty bags of ballast they alighted in a field at Alt-Sauken, in Courland. They were obliged to spend the whole night in the open-air in the stormiest weather.

"Although they failed to reach St. Petersburg, they are universally congratulated on achieving two records—an overseas flight of 360 miles from Swinemünde to South Courland and a total flight of 1,020 miles at a greater average speed than that hitherto attained by any medium of locomotion, whether train, motor-car, or aeroplane.—*Reuter*." [Of course, wind speed does not matter.—Ed.]

## Natural Stability.

Sir,—May I be allowed to complain a little of the remarks made in your last issue about my book, not of their adverse nature—I expected that—but of their unfairness.

I maintain in my book that there is no reason why a supplementary plane cannot be placed on a flying machine, which, unused in flight, may come into action as a parachuting surface in descent. You take that as evidence that I do not know the difference between the action of an aeroplane and that of a parachute. By the same reasoning, had I suggested that an aeroplane could be carried on a trolley, you would have



assumed that I did not know the difference between a Picken's van and a Gnome engine.

You quote: "The author has endeavoured to make no statement which he cannot by some experiment amply prove," and cite, as apparently the only statement you can find in the book which appears to you to contradict my assertion, "aeroplanes are the most unstable of all things." This, it seems to me, is sufficiently obvious without proofs, but if any were needed, there are a hundred dead heroes of aviation whose names would supply it.

You say I ignore "the fact that in the modern aeroplane the pilot practically leaves the machine to stabilise itself." I do not ignore it; I deny it, and shall continue sceptical until I can see the pilot do a mile or two and some sharp turns without moving the balancing levers.

Your last paragraph is the only part of the whole Jeremiaid that comes properly under the head of "criticism," and had you taken one of my premises and shown it to be "incorrect," it would have been fair criticism. This, however, you do not do, for the simple reason that it is impossible by any amount of reasoning to upset a theory based, as is mine, on actual experiment with actual things. In short, if you covered the whole of *THE AEROPLANE* with denunciations of my theory you could not thereby succeed in making a model built to my design turn turtle, dive, come down tail first, or in any other way than on its skids.

Yours faithfully,

W. LE MAITRE.

[I've are sorry that Mr. Le Maitre should consider our criticisms of his work unfair. Of course he must expect us to differ from him on this point: taking his letter, paragraph by paragraph, the following comments occur to us:—

Mr. Le Maitre is at liberty to maintain that there is no reason why supplemental planes should not be carried; his maintenance of the statement makes no difference to the fact that there are many reasons; although, it is true, they may possibly be inadequate—that is a matter of opinion.

The particular mis-statement which we extracted and dealt with is not the only one in the book; it was one of many, and not a particularly flagrant one. We quoted it simply because it was short and space in *THE AEROPLANE* is valuable. With reference to this also he is at liberty to deny the fact that a pilot does leave his machine to stabilise itself. Perhaps he has never seen Mr. Barber doing circuits and figures of eight on a Valkyrie in a ten-mile wind while conducting an imaginary orchestra with both hands. He may also be interested to learn that in the Roubaix-Calais stage of the European Circuit, which was flown in a fifty-mile gale, Mr. Valentine, on the Deperdussin, finding himself in imminent danger of being pitched out of his machine, left go of the controls entirely and hung on to the fuselage with both hands; yet, miraculous to relate, neither of these gentlemen are dead heroes.

With reference to his last paragraph, nothing would please us more than to have the opportunity of a public debate with Mr. Le Maitre, in which we could discuss with time and comfort the premises of his argument and his development of the same. Perhaps he does not appreciate the fact that if we were to take and deal with every error in his book we should fill several issues of *THE AEROPLANE*.—ED.]

#### Still More About Freak Models.

Sir,—In thanking Mr. R. R. Drake for his courteous remarks concerning the "Mann" monoplane, I am pleased to inform him that the screws on the forthcoming full-sized "Mann" monoplane will differ little in general design from those employed on the model, although the blade area may be slightly reduced.

In suggesting that the half-mile distance records of the "Mann" monoplane are "positively absurd," Mr. R. R. Drake has been guilty of what politicians would call a "terminological inexactitude," and which the man-in-the-street would describe by a much more forcible expression. The first "half-mile" was not by any means "so-called," but was duly flown in the course of a competition at Mitcham Common on July 20th last. The distance was carefully measured by Mr. Janaway, 48, Tottenham Street, Tooting, with whom I hope Mr. R. R. Drake will be honest enough to communicate. The machine used on this occasion—"Mann" monoplane No. 49—was fitted with nine-inch screws with an effective pitch of 27 inches, giving, in the course of a thousand revolutions, a flight of 2,250 feet, the wind and the final *vol plané* accounting for the slight extra distance. Since then the half-mile has

been performed on many occasions, and the distance has been repeatedly measured and certified by unprejudiced and independent observers.

In reference to the statement as to the absence of the really big men—including, of course, Mr. R. R. Drake—from the competitions at the end of last season, I have again to inform Mr. R. R. Drake that he has been guilty of another mis-statement nearly as flagrant as the one I have referred to, for it is a fact that both Messrs. Burgin-Webb and Clarke were utterly vanquished by Mr. Mann in the competitions recently held at Perivale. And I have no hesitation whatever in asserting that had Messrs. Fleming-Williams, Ding, and Sayers, or even the great Mr. Drake himself, been present on these occasions they would have had to wind up to an unprecedented extent to approach the distance and duration records of the "Mann" monoplane.

Again hoping that Mr. R. R. Drake will apologise for the presumably unintentional mis-statements he has made, and expressing the wish that the "Drake" monoplane may be seen in the course of next season's competitions.

Ipswich.

ROBERT P. GRIMMER.

Sir,—My previous letter was, as I mentioned therein, not controversial, but castigatory. In one instance it seems to have produced its desired effect, but I notice with surprise that Mr. Grimmer still holds up his head, and I therefore propose to deal with his letter.

Firstly, Mr. Grimmer seems to labour under the misapprehension that there is a standard ratio in full-sized machines between the span and the propeller diameter. It might be interesting, therefore, for him to know that in one actually successful machine the propeller is only one-sixth of the span, whereas in another, equally successful, it is two-fifths. It therefore appears to me that if his two eight-inch propellers are allowable, then, running to the other extreme, it is perfectly justifiable to put two eighteen-inch propellers thereon.

As to his ridiculous question *re* ideal ratio between weight of frame and weight of rubber, it is perfectly obvious that to achieve a maximum distance it is desirable to have an infinite weight of rubber and an infinitely light frame, if only one could design an infinitely light frame sufficiently strong.

I am sorry that he cannot agree with my contention that a model will fly almost exactly the same distance with propellers of any diameter; perhaps he will excuse my adding the limitation "within reason." Then, if he will experiment, he will find that I am correct—in spite of his disagreement. His next statement that "the addition of more rubber does not necessitate the use of a stronger frame, as the latter, if correctly designed and braced, will usually resist the pull of any extra power that one cares to cram on," is equally futile. It is obvious that if the frame will stand a greater pull with a fair factor of safety, it must be unnecessarily strong for the original power; and is therefore *not* correctly designed.

With regard to the question of the terms "power" and "energy," it is quite possibly the custom among Mr. Grimmer's associates to refer to rubber as power, but it is certainly not usual among adult model flyers. At Brooklands and Hendon one naturally refers to power, because the output of a petrol motor is measured in power, and it must be remembered that a given full-sized machine usually retains the same propeller, whereas a model, as a rule, has its propellers changed with its power.

As with various methods of distance-increasing, I will give my opinion on their comparative faults when I have tried them all. Up to the present I have only experimented with his own, the fifth and last.

Finally, I must again repeat that I do not intend to enter into a controversy on this or any other subject, so that Mr. Grimmer is now at liberty to answer this letter as best he can, without fear of being again bothered by logical argument.

Eselbrücken.

PFFELFLEIGER.

Sir,—I have read with much interest the numerous letters that have appeared the last few weeks concerning freak models. Mr. Grimmer, in replying to "Pffelfleiger," says a great deal about comparing "freak" models in comparison with full-sized machines. Does Mr. Grimmer imagine that a full-sized machine following the dimensions of the "Mann" model is going to be a success? It would be 16 ft. span, with two propellers 8 ft. in diameter and 24 ft. in pitch, no angle of inci-

dence, and a huge camber. Will Mr. Grimmer explain what is there scientific in a machine (model or full-sized) with the above dimensions? Also will Mr. Grimmer explain what the "Mann" monoplane is doing to further the science of aviation more than any of the other freak models he so despises? As far as I can see, it flies its half-mile, and that's all. It does not solve anything about lateral stability or any of the other little points which, he says, the model-maker should solve, and the reason why it flies so far, no doubt, is through making the propellers such a huge blade area, so that they take a long time to run out. As Mr. Drake remarks in his letter, the wind plays a great part in distances flown by this model. I myself have seen models flying great distances in winds of thirty miles an hour, and they have flown as straight as a die; but when the same models were flown on a calm day they did not cover by any means the same distances, and did not by any means fly straight. It appears to me that these strong winds fairly hurl these light models with them, and make it impossible for them to turn, because they are blown straight as soon as they attempt to do so. In concluding this lengthy letter, I must congratulate you for your grand paper, as I think there is nothing like it.

Manchester.

MANCUSIAN.

Sir,—I am obliged to your correspondent, "A Mannite," for his information about the "Mann" monoplane. I was under the impression that Mr. Mann won the prizes for steering on a different type of model from that with which he holds the distance and duration records.

I notice in various club notices that certificates for models are being given. I think it would be much better if the regulations were made out by one club and anyone allowed to try for the certificate whether a member or not.

Sudbury, Suffolk.

MONTAGUE L. ROLFE.

Sir,—I have been following with much amusement the correspondence concerning freak models, and, as far as I can glean, the discussion has only touched the subject of the rubber motor and propellers.

In my opinion, comparing a rubber-driven model to a full-sized petrol-driven machine is nothing less than futile as far as propulsion is concerned. But what all your correspondents seem to forget to do is to show the "freakishness" of models in relation to their surface and their speed.

I am certain that, were I to take the loading in a hundred different models, in fifty cases it would work out at 6 or 7 ozs. to the square foot. Probably in the remaining fifty the loading would amount to 3 or 4 ozs. to the square foot.

Now take the Blériot monoplane, the loading is about 15 lbs. to the square foot (?—Ed.)! I know many will argue that in a model of small size, compared to the Blériot, conditions are different. I partly agree with them. But take the case of small birds: the loading must be in many cases something like 5 or 6 lbs. to the square foot.

This question of loading brings me on to the subject of "freakishness" in speed. The greater the loading, the higher the speed must be to give the necessary lift. And now I come to the class of models described by Mr. Grimmer as projectiles. I suppose this sarcastic appellation is due to this reason: that his cherished "Mann" model is only capable of a speed of 18 m.p.h. (without the wind). I would be interested to know what epithet he ascribes to the 80 m.p.h. Dep. racer, if a 60 m.p.h. model is a projectile. To my idea, a low-powered, heavily-loaded, and therefore speedy model is much less freakish than the slow, duration affair, got up only for winning competitions with absurd rules.

I may say I have a 5-oz. 3-ft. twin-propeller model, with the same amount of rubber in proportion as the "Mann" monoplane. The loading is 12 ozs. to the square foot. On a calm day, with only 700 turns on each propeller, I can do my 1,200 ft. at a speed of over 35 m.p.h. As the machine glides, and does not dive when the propellers stop in the air, I conclude that it owes a lot of its speed to small surface, efficient surface, and low head resistance. I hope shortly to design a still more speedy and efficient model.

Hanwell.

L. S. C. ROCHE.

#### Wanted: A Club in Dublin.

Sir,—I think it is about time that a model aero club was formed over here to try and encourage the sport in Ireland. Last year Mr. Rowland Ding came over to show the inhabitants of Dublin what a model aeroplane could do. But what is the use of one solitary person trying to introduce a new sport if those already interested do not back him up? So far as I know Mr. Ding's exhibition flights had no effect

on the crowd of spectators who witnessed them. I and a very intimate friend of mine, who lives in the West of Ireland, and who has made models which have flown over the quarter mile, have determined to start a club. We would be very glad if any of your Dublin readers would communicate with me and assist us to form the club. Wishing your very interesting paper continued success.

M. ODEL.

[It is about time. Replies to M. Odel, c/o THE AEROPLANE, 166, Piccadilly, London, W., will be forwarded at once.—Ed.]

#### The Royal Aero Club.

The annual dinner will take place at the Royal Automobile Club, Pall Mall, S.W. (by kind permission), on Thursday, December 14th, 1911, at 7.30 for 8 o'clock. In order to facilitate the arrangements, members are requested to notify the secretary as early as possible if it is their intention to be present. Members may be accompanied by ladies. Tickets (inclusive of wines, cigars, etc.): Gentlemen, £1 5s.; ladies, £1 1s. The following prizes were drawn, and will be presented: The Manville £500 prize, to C. H. Pixon; the British Empire Michelin Trophy No. 1 and cash prize of £500, to S. F. Cody; the British Empire Michelin Trophy No. 2 and cash prize of £400, to S. F. Cody. After the dinner there will be a musical entertainment.

At the last committee meeting the following new members were elected: Henry Armstrong, Anthony Denny, C. V. Fowler, Edgar Leicester Grant, Lieut. Henry Harold Harford, R.F.A., and Capt. Geoffrey Francis Hastings.

The following aviators' certificates were granted: 155, Oswald Lawrence Mellers (Bristol biplane, Salisbury Plain); 156, Sub-Lieut. F. E. T. Hewlett, R.N. (Farman biplane, Brooklands); 157, Robert Bertram Slack (Blériot monoplane, Hendon); 158, Capt. Richard S. M. Harrison (Bristol biplane, Brooklands); 159, Captain C. R. W. Allen (Bristol biplane, Brooklands).

F.A.I. Conference.—The question of tests for aeroplanes, which is down for discussion at the forthcoming conference, was further considered, and the committee decided that, in its opinion, it was undesirable at the present time to institute the proposed certificate of air-worthiness. This proposal is being brought forward by the Aero Club de France, and the delegates attending on behalf of the Royal Aero Club will place the club's views before the Federation.

Mr. C. Grahame-White attended before the committee and fully explained the various details connected with his protest against the award in the Statue of Liberty prize. The committee unanimously decided to proceed with the protest, and Mr. C. Grahame-White will accompany the delegates to Rome to give his evidence before the Federation.—H. E. PERRIN (Sec.).

#### The Women's Aerial League Protests.

A meeting, to express public disapproval of the Government's persistent action of purchasing foreign machines for the British Army, has been arranged by the Women's Aerial League to take place at the Chelsea Town Hall on Tuesday, the 28th inst., at 8 p.m.

The Women's Aerial League protests against the Government's decision because:—

- (a) It is improvident from every point of view to supply the Army and Navy with aircraft built abroad.
- (b) The sums of money expended in buying foreign machines place in the hands of foreign manufacturers greater facilities for creating even more perfect types of aeroplanes.
- (c) The French War Minister, in devising his scheme for improved types of aeroplanes, had in mind the furthering of the industry, while deriving through it every possible advantage for his Department. The healthier the industry becomes the greater the assistance to be derived from it by the State from the points of view of revenue and defence.
- (d) By buying ready-made machines we lose experience in every direction which we should gain if we constructed them in our own workshops.
- (e) The foreign firms will derive from the Government orders a splendid advertisement at the expense of the British ones.
- (f) The Government's decision has already caused at least one British aeronautical firm to suspend business, and it may have similar effect on other firms.



(g) The purchase of foreign machines by the Government will not really diminish the lead which other countries have in aeronautics, but will, on the contrary, tend to increase it.

All those interested from any point of view are earnestly asked to be present and to take part in the discussion which will follow the speeches.

### The Aeronautical Society of Great Britain.

A meeting of this society will be held at the Royal United Services Institution on Wednesday, December 6th, at 8.30 p.m., when there will be a discussion on "The Military Aeroplane."

Intending new members are reminded that for those joining before December 31st the entrance fee will be remitted. The annual subscription for new members is now £2 2s.

There has also been formed a new class of associate members with an entrance fee of 5s. and an annual subscription of 10s.

The papers in connection with the creation of the technical side are now being prepared and will shortly be circulated.

53, Victoria Street. T. O'B. HUBBARD (Sec.).

### The Flanders School.

The latest firm to adopt the new "Government" price of £75 for tuition "all in," with £10 rebate when pupils do no damage, is the Flanders School at Brooklands. The chief pilot of the school, Mr. Ronald Kemp, is one of the finest flyers in this country, and certainly one of the safest and steadiest. His landings are particularly good, and the way he brings the big, fast Flanders monoplane down without a jar or a bump on a windy day with a full load of petrol on board is an object-lesson in how it should be done. To add to the efficacy of tuition the school monoplane has been fitted with dual control, so that the pupil, who is seated in front of the pilot, has a wheel and rudder-bar working in unison with that of the pilot. By an ingenious arrangement the pupil's controls are so fitted that though they have the same angular motion as the pilot's, it is impossible for the pupil, if he loses his head, to overcome the pilot and so cause an accident. Thus the pupil learns all the motions of controlling the machine while flying as a passenger. The Flanders is the only machine in Great Britain so fitted, and practically the only one in the world, for, in the few foreign machines with dual control, no allowance is made for the pilot to overcome the pupil if the latter does the wrong thing. Mr. Howard Flanders is prepared to offer special inducements to the first few pupils, and prospective flyers are advised to communicate with him.

### Bargains in Glider Planes.

As our readers know, Messrs. A. V. Roe and Co. have carried out numerous experiments with all kinds of plane sections with varying cambers, etc. These they have now left on their hands, and we hear that they are selling them off at pepper-corn prices for gliders. As they are in good condition, they should save the glider enthusiast time and money.

### Aeroplane Glue.

The General Aviation Contractors, Ltd., advise THE AEROPLANE that they are the sole concessionaires for the well-known "S.C." aero glue, as specially prepared by Messrs. S. Chicot, of Paris, and generally used by well-known aeroplane manufacturers, such as Blériot, Farman, Derpessus, Morane, Sommer, Caudron, etc., for aeroplane wings, etc.

[The Visitors' List is unfortunately crowded out this week.]

### CLUB NOTES.

**Brighton and District Aero Club.**—Discussing weather prevented any real flying during week-end. Proprietors of Brighton-Shoreham Aerodrome have kindly given club the use of their ground, and any member can obtain free admission to aerodrome when carrying model on production of his membership card. New workshops are being taken in Little Preston Street, the club having outgrown those in Temple Street. New shops will be in working order midday of present week. Several interesting machines are ready for trial when weather is better. New members joining weekly.—C. H. BARNETT, Hon. Sec.

**Bath and Somerset Aero Club.**—Model Aeroplane Exhibition and discussion held on the 17th inst., at the Church Institute, Bath, at which a good number were present and models exhibited by various members. Mr. Richard Young intimated that he would place his workshop and tools at disposal of members, and Dr. E. White announced his willingness to supply the club with all materials and accommodation for a glider. This offer unanimously accepted and Mr. White promised to give a short lecture on the building thereof, at which necessary arrangements would be made.—S. H. BAKER, Hon. Sec.

**Bristol Model Flying.**—Model Flying Meeting was held on the Downs on Saturday last. Attendance very good, and in spite of wind various members' models made good flights. Edgar's 18 ft. 1 in. 20-m.o. machine, 800 ft. in straight line; Brewitt's 1-1E-1-P-0 machine, 600 ft.; Tivy's

42 in. 16 oz. 0-2T-2-1 (floating tail) machine made debut by rising in 8 ft with 9 in. tractors and 3 oz. rubber. Balance incorrect so turned somersaults. Persons interested please communicate with me if willing to join low subscription club. Discussions will be held on all aspects of aviation, so inventors please come forward. Next model flying meeting on Downs, Saturday, November 25th, at 3.15 p.m.—R. V. TIVY, 3, Royal York Crescent, Clifton, Bristol.

**Birmingham Aero Club.**—Owing to weather decided not to hold competition on ground on Saturday last. However, splendid flying by George Mason, with twin propeller model of unique design. During afternoon materials for glider arrived and construction started. Mr. B. W. Beeby, Mr. E. Trykle, and other members will be shortly starting glider of original design. A stove is to be installed in shed for warmth during winter, and to allow construction of gliders in comfort. I regret to state that owing to unfortunate financial state of club it is contemplated giving up the new shed which has been erected at Edgbury. Committee exceedingly sorry to decide this course, but no alternative. Failing off in membership during last few months has seriously hampered club, and few members still remaining express surprise that Birmingham enthusiasts have not given more earnest support. It is with greatest reluctance that Committee are forced to make this statement, and hope that members will not regard it as final failure, but will come forward and enthusiastically assist in again building up a worthy club.—G. HADRON WOOD.

**Blackheath Aero Club.**—Dollittle, Whitworth, Hent, Brough, Clark, Trank and Pizey had practice at Lee Aerodrome. On Blackheath Clark obtained 1st Class Certificate with 1,215 ft. L.C.C. have granted club permission to fly models on Heath during stipulated hours. In addition to 1st and 2nd Class Certificates Committee will grant "Superior" Certificates for models which rise from ground under own power and fly 750 ft. Meetings at Central Hall, Peckham, on Jan. 4th, at 8 p.m., and all members and friends invited. Details from A. KIPRON (Hon. Sec.), 5, Linesford Road, Nunhead, S.E.

N.B.—Club Notes must be posted to 166, Piccadilly, to arrive not later than first post Monday morning.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERON, London.

Telephone: Mayfair 6407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
		s.	d.			s.	d.
3 months,	post free	-	1	3 months,	post free	-	2
6 "	" "	-	3	6 "	" "	-	5
12 "	" "	-	6	12 "	" "	-	11

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed. "A/c of Payee only" otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.

There is no propeller beats the AEROSPEED. We are the makers.

Then send to

**E. MELCOMBE, HARPENDEN, For all accessories.**

Large stock of wood, free from defects, knots, etc.  
Hickory & Silver Spruce, up to 4 in. x 12 ft.  
American Ash, Poplar, and Birch, 48 ft., 10

ELASTIC

Stamp for Catalogue

sq. 1 1/4 d. per yd. cr 11d. per dozen yards

1/2 strip (about), 1d. per yard, 10d. per dozen yards.

1/4 x 3/4 strip, 2 1/2d. per yard, 1/10 " 10d.

PARCELS sent UP FROM 2/6 TO £1 1s. 0d.

# BLACKBURN

## MONOPLANES & PROPELLERS

For Durability, Stability, and Efficiency.

TUITION.

Write for prices and particulars to—

**The BLACKBURN AEROPLANE Co.,**

Phone: 2322 Central.

BALM ROAD, LEEDS. "Propellers, Leeds"

Tel gram: "Propellers, Leeds"

## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted ONLY—18 words **1/-**. 1d. per word after.

### PATENTS.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS. THE AEROPLANE will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to THE AEROPLANE, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

### FINANCIAL.

SYNDICATE being formed to exploit well-trying all-British Monoplane. For full particulars and to see machine in flight, apply Box No. 404, THE AEROPLANE.

### MACHINES.

**£400** SPECIAL OFFER of twelve AVRO Biplanes complete with 35 h.p. Green engine. Usual price £600. Offer withdrawn November 30th. Write at once for particulars.—A. V. ROE & Co., Brownsfield Mills, Manchester.

NO REASONABLE OFFER REFUSED. New 3-seater "Valkyrie" monoplane; 80 h.p. engine; Spiral Tube radiators; Claudel-Hobson carburettor; beautifully built and finished; been through trial flights; FOR SALE as a bargain owing to death of owner.—Box 401, THE AEROPLANE, 166, Piccadilly

### ENGINES.

**60** H.P. Green Engine, practically new, Dual Ignition, Flywheel, Pumps, Radiator, all perfect, going cheap. PLANES LTD., Duke Street, Birkenhead.

**1912** ALVASTON aviation engines. Fitted with latest improvements. The only reliable engine that appeals to those of moderate means. May we send you full particulars?

**1912** ALVASTON engines. We have decided to supply a limited number of components for building our 20, 30 and 50 h.p. (including licence to construct) at moderate prices, in order to enable mechanics having the skill to assemble an aeroplane engine to produce a successful power plant at small cost.

**1912** ALVASTON engines. Vibrationless, robust, light, extremely efficient. They have pump lubrication, horizontal opposed cylinders, all steel parts forged from Chrome Vanadium steel. ALVASTON MOTORS, Derby.

### PROPELLERS.

PROPELLERS:—Avro propellers of proven efficiency. "Pashley fitted Avro propeller, suddenly found troubles disappeared, and flew five good circuits." [AEROPLANE.] Equally good results if fitted to your machine. A. V. ROE AND Co., Brownsfield Mills, Manchester.

### CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS

hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

"BLACKBURN" propellers supplied, and successfully used on all the leading motors. THE BLACKBURN AEROPLANE Co., Leeds.

### TUITION.

TUITION, with or without limited liability, Blériot XI.; personal instruction.—Box No. 405, THE AEROPLANE.

**£50.** TUITION in flying till certificate is won. Three-quarters of the prizes at Weybridge during 1911 won by AVRO pupils. The AVRO School for most thorough and all-round instruction. A. V. ROE AND Co., Brownsfield Mills, Manchester.

**£75.** TUITION for Aviator's certificate on both Deperdussin and Blériot Monoplanes. Insurance against breakage and third party risk.

**£15** RETURNED to pupil in the event of no breakage. Perfect equipment. Personal instruction. Write for agreement form. W. H. EWEN, Lanark Aerodrome, Lanark.

HERBERT SPENCER FLYING SCHOOL. Brooklands Aerodrome, Weybridge.—Tuition £50, deposit £50, returnable—less cost Royal Aero Club fee, Insurance, fuel, breakages, (Last pupil (only £6 19s.) says "tickled to death.")

BARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

DEPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD., 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

FILEY AERODROME. Tuition on Blackburn or Blériot Monoplane. For particulars apply BLACKBURN AEROPLANE Co., Leeds.

### MISCELLANEOUS.

HANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

FOR SALE AT BARGAIN PRICES.—A three years' accumulation of new and slightly used aeroplane parts as follows:—Fuselage for biplane or monoplane, Simms magneto, 1 White and Poppe and four Green carburettors, four control levers, two rudder foot levers, metal foundations for 50 h.p. Gnome, 2 steel shock-absorber springs, Blériot type, pair Lamplough radiators, large assortment propellers, wheels, tyres, tanks, cushioned seats, strainers, ferrules, rudders, elevators, ailerons, 3 sets monoplane planes, sockets and fittings, etc., etc. Must clear to make room. AERONAUTICAL SYNDICATE, LTD., Flying Ground, West Hendon, N.W.

### FLYING MODELS.

"MANN" MONOPLANE.—Owing to the enormous demand for this machine, we are unable, for the present, to accept any further orders. What we can still supply by return of post are parts for constructing a "Mann" Monoplane 5/6, "Mann" propellers 3/6 per pair, "Mann" geared winders 5/6, "Willis" ¼ inch strip rubber 1/6 per dozen yards, and "Willis" lubricant 9d. per bottle. From all large toy shops and stores, or post free in THE UNITED KINGDOM only from the sole manufacturers, WILLIS Bros., 14, Wellington Square, Hastings.

MODEL PROPELLERS—Genuine CHAUVIERE—8in., 10in. and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.

ALLWEATHER single propeller Monoplane, guaranteed flight 1,000 ft., price 10/6 post free. THOROGOOD Co., Icknield Way, Letchworth, Herts.

MINIATURE Practical Petrol motors, ½ h.p. water or air-cooled. Cylinder bored, valves bored, crankcases fitted, Plug tapped, the set 9/9. LITTLEOVER AERIALS, Derby.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, NOVEMBER 23rd, 1911

No. 25

## THE "BRISTOL" FLYING SCHOOLS At Salisbury Plain and Brooklands

Have trained nearly

AS MANY AVIATORS AS  
ALL OTHER ENGLISH  
SCHOOLS COMBINED

AND OVER HALF OF  
ENGLAND'S NAVAL &  
MILITARY OFFICERS.

The "BRISTOL" Schools  
secure the best results  
because they have

### THE BEST

Equipment, Instructors,  
Grounds and Methods.

Fee to Navy and Army Officers  
for Tuition and Insurance . . . £75  
(Breakages and Third Party.)

Particulars from—

## THE NEW "BRISTOL" MONOPLANE

possesses in an even enhanced  
degree the qualities of

Strength, Stability, and  
Excellence of Design,  
Construction, Materials and  
Finish for which the 'Bristol'  
products are famous.

### PRICES:

**Military Type** (Two Seater) £950  
With 50 h.p. Gnome Engine.

**Racing Type** (Single Seater) £900  
With 50 h.p. Gnome Engine.

**Popular Type** (Single Seater) £500  
With 28 3/4 h.p. Engine.

Full Particulars on application.

**The British & Colonial Aeroplane Co., Ltd.,  
FILTON, BRISTOL.**

"THE AEROPLANE," NOVEMBER 30, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY, ("Aero-Amateur")

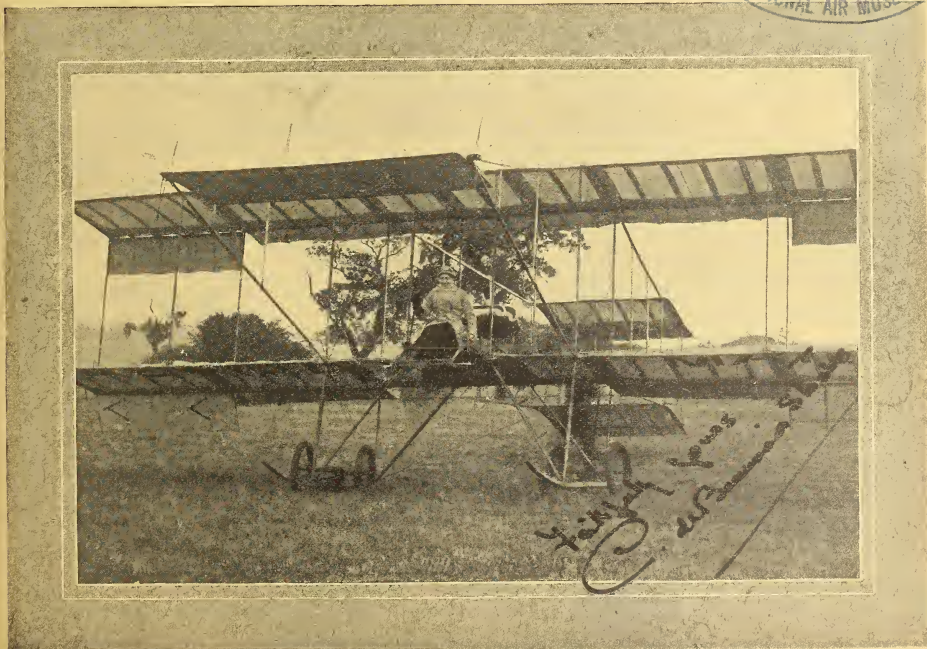


Vol. I.] [REGISTERED AT THE G.P.O.]  
AS A NEWSPAPER.

THURSDAY, NOVEMBER 30th, 1911.

No. 26

## THE "LADY-BIRD."

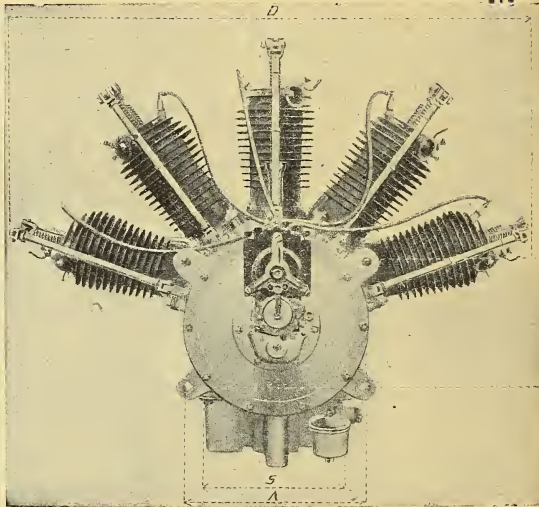
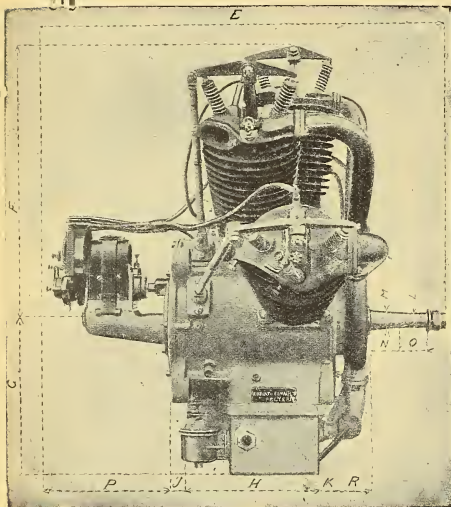


Mrs de Beauvoir Stocks, one of the finest of our flyers to-day of either sex She is here shown on the old school biplane of the Grahame-White School, where she learned to fly,

SMITHSONIAN INSTITUTION OCT 27 1959



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

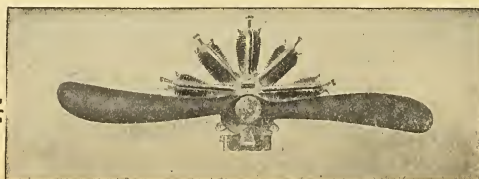
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.



# CONTENTS.

	PAGE
THE GOVERNMENT POLICY ... ..	603
THE LAY CRITIC AND GOVERNMENT ORDERS	606
THE END OF THE FRENCH TRIALS ...	608
AIR CURRENTS ... ..	610
POINTS FOR PROSPECTIVE PUPILS	
By "VENTRE-A-TERRER" ...	611

	PAGE
THE WEEK'S WORK... ..	612
ATLANTIC TO PACIFIC ... ..	614
HALF A DAY AT BRISTOL ... ..	616
CORRESPONDENCE ... ..	618
THE VISITORS' LIST ... ..	621

## The Government's Policy.

Thanks to a certain amount of inside information, and to answers given by Colonel Seely, the Under Secretary of State for War, to questions in the House of Commons, THE AEROPLANE is now able to give a fairly accurate forecast of the Government's policy in the matter of military aviation.

In the first place, it is officially announced that an international competition is to be held in order to secure the "best type" of aeroplane for military use. The prize is to be in cash, and no definite number of machines will necessarily be ordered from the winner.

Secondly, and though this is unofficial news, it comes from an absolutely reliable source, a second cash prize, somewhat smaller in amount, is to be given exclusively for machines of British build. It is not yet definitely decided whether these will be all-British, or whether foreign engines will be allowed, but it is, at any rate, a distinct encouragement to British constructors, who will have two chances of winning a prize against one for the foreign competitors.

Thirdly, when the result of the competition is known, orders will be placed with the constructors whose machines have done well in the trials. The writer is assured, on the very best authority, that *the constructor of every machine which acquires itself well in the trials may be assured that he will receive orders, whether he is one of the prize-winners or not.* This is a most important, and a most encouraging point, for it vouches for the Government's intention to spread its orders among a number of firms, and so help to put the industry on such a footing that, in the event of war, we shall have a number of firms properly equipped to supply us with war material.

Fourthly, every machine bought for the Army as the result of that competition will have to be built in Great Britain. No more foreign-built machines will be bought, and if the winner of the big prize in the competition should prove to be a foreigner, and he should wish to secure further orders, he will have to arrange to manufacture in Great Britain, either by opening works himself, or by farming out the construction to a British firm.

Fifthly, the conditions of the competition, and the tests to which the machines will be subjected, will be officially announced in the middle of December, and the trials will take place about six months afterwards, so that there will be ample time for any constructor worthy of the name to design, build, and tune up machines suitable for the purposes of the tests, and at the same time there will not be much time wasted before the aeroplane corps is put on a really adequate basis.

Sixthly, it is more than probable that before the actual competition takes place, a goodly number of orders for machines will be placed with British firms, or with firms able to build aeroplanes in this country. The authority to whom the writer is indebted for the preceding information was of the opinion that forty or fifty machines would be ordered at once, the orders being placed as soon as possible after the official announcement of the Government programme in December. This, of course, is exactly what existing British contractors want, and it should come as a well deserved reward to those men who have so pluckily fought their way through the past two years of neglect and disappointment. It is earnestly to be hoped that these orders will be given according to genuine merit and experience, and not merely handed out to those individuals who are able to pull strings and use influence, or to those who talk glibly of having enormous factory resources, which they profess to be able to organise in a few weeks so that they can turn out aeroplanes of any type desired. We have already seen something of the results of trying to copy machines without experienced men to do the detail designs.

### Military Pilots.

While giving this consoling news to the British constructors, THE AEROPLANE is also able to add some information for military pilots. The Army Order has already appeared, which states that officers obtaining their pilots' certificates will receive the grant of £75 promised by Colonel Seely in the House of Commons recently. It also states that applicants must be "recommended" by their own commanding officers and must be certified physically sound. It is not, however, made clear who is, or who is not, to get the £75. Information to hand makes it possible to state that the £75 grant will be given to *all* officers on the active list who have passed for their certificates in the past, though it is to be feared that some of them would be of little use in a future war; but the grants for the future will be limited to the selected men up to the number of one hundred. It will therefore be wise for any officer who wants to make sure of getting his £75 back, to assure himself that he is certain of being recommended for attachment to the Air Battalion by his commanding officer, that he is certain to be passed by the doctor, and that when he has actually got his certificate he does not bring the total number of officer-aviators over the hundred.

It is, however, fairly certain that before the full hundred is reached, the Government will find that they need at least a couple of hundred more, so there is not much need to be anxious.



The French Army is pushing military pilots through their certificate tests at the rate of about three or four a day whenever the weather permits, and, owing to the difficulty of sparing regimental officers from their ordinary duties, a large number of non-commissioned officers of the best class are also in training, so that the French Aeroplane Corps in twelve months' time should number well over 1,000 pilots. England has, at present, six military pilots actually belonging to the Air Battalion; France has approximately 200 permanently on aeroplane work already; Germany has in or about 50, and is rushing others through at high pressure; so it is safe to assume that we shall want 300 or more—and machines to mount them—in the next twelve months.

The chief trouble in the immediate future will be that officers commanding battalions will not care about losing their most efficient officers for some months while undergoing their training and during the ensuing period of attachment to the Air Battalion, and this difficulty is likely to be chronic until the Aeroplane Company is cut loose from the Royal Engineers and formed as a separate regiment, into which men will be passed direct from Woolwich or Sandhurst, just as they now pass into Engineers, or Artillery, Cavalry or Infantry.

#### The "Best Type"

In arranging a competition to discover the "best type" of aeroplane for military use, the War Office is up against a problem which would puzzle a much more intelligent institution. It seems to be assumed, even by aeroplane constructors themselves, that the recent French trials were arranged to discover this "best type," and that the French Army is henceforth committed to big heavy three-seaters, many of which are slow, and clumsy to handle, and all of which are fitted with enormous and expensive engines. This is quite an error. The competition was evolved with a specific object in view, and that object has not as yet been made public. The following is the reason for it.

All French military organisations are arranged with one object in view—war with Germany. Now the only thing France really fears is that in the first

day of the war, if it is moderately calm, the German dirigibles, about a dozen or so in number, which are stationed all along the French frontier, may come across the border and succeed in paralysing the French frontier fortresses such as Verdun and Vesoul by blowing up the magazines, so leaving the road open for the German advance. Consequently the French plan is to have a large number of the three-seaters distributed along the border, so that, no matter what the weather may be, within half-an-hour of the declaration of war the whole fleet of aeroplanes will have flown into Germany and a squadron will have blown up each of the German dirigibles, shed and all, before it has had a chance to get out. Each aeroplane will carry two men only, the pilot and the bombardier, the weight of the third man and the superfluous fuel being made up to the limit with explosives. Even if one or two dirigibles manage to get out, the superior speed and numbers of the aeroplanes will enable them to worry the dirigibles up and down till gas and ballast are exhausted, and the things can be destroyed at leisure. In fact the three-seaters are, in reality, two-seater dirigible destroyers, and very little else. Some of them may be used to carry a "wireless" outfit instead of explosives, but that is about all.

For actual scouting Continental nations favour a light, fast, single-seater, or a two-seater of practically the same size as the single-seater, and this fact is proved by the enormous number of orders in hand at the French factories, the Nieuport works alone having over 80 machines on order, and Blériot something like 200, practically all of them being 50 h.p. and 70 h.p. single and two-seaters, the orders coming from France, Russia, Italy, Spain and Roumania. Germany and Austria are, of course, building their own military machines. It may therefore be seen that it is impossible to say definitely that the "best type" shall be either a one, two, or three seater. Each is useful in its own way and each demands different tests to prove its efficiency, so that no one series of tests can possibly produce the indisputably "best." To arrive at that there would have to be three distinct competitions, with three different codes of rules, and three separate prize-lists.



The only aeroplane in New Zealand. It was sent out by Howard Wright, with instructions as to assembling. The purchasers, The Walsh Aeroplane Co., of Christchurch, put it together, and it flew at the first attempt.

# THE GRAHAME-WHITE FLYING SCHOOL,

**The London Aerodrome, Hendon, N.W.,**

*The finest equipped and most accessible Aerodrome in the United Kingdom.*

---

---

**CONSULT US—DON'T DELAY.**

---

---

TO HAVE BEEN TAUGHT IN OUR SCHOOL PLACES  
THE HALL-MARK UPON YOUR FUTURE REPUTATION  
AND ENSURES YOU CERTAIN SUCCESS.

*Among the many successful Pilots trained at our school are the following:—*

**J. ARMSTRONG DREXEL** (Leading Amateur).

**CHAS. HUBERT**, Pilot, Grahame-White School  
(1st U.K. Aerial Postman).

**LEWIS TURNER**, Chief Pilot, Kennedy Aviation  
Co., St. Petersburg, Russia.

**J. L. TRAVERS**, Engineer-Pilot, Messrs. Short Bros.,  
Eastchurch.

**NAVAL LIEUT. O. DAHLBECK**, Chief Pilot,  
Swedish Navy.

**CLEMENT H. CRESSWELL**, Late Chief Pilot,  
Grahame-White School (1st U.K. Aerial Postman).

**J. V. MARTIN**, Chief Pilot-Constructor, Queen  
Aeroplane Co., New York, U.S.A.

**W. RIDLEY-PRENTICE**, Manager, The Aero-  
nautical Syndicate, Ltd., Hendon.

**E. F. DRIVER**, Pilot, The African Aviation Syndicate,  
Ltd. (1st U.K. Aerial Postman).

**W. C. ENGLAND**, Managing Director, Burmah  
Aeroplane Syndicate, Rangoon.

**MRS. C. DE BEAUVOIR STOCKS** (First Lady Pilot to carry a Lady Passenger).

Full particulars on application to—

**THE GRAHAME - WHITE AVIATION CO., LTD.,**

Phone—  
KINGSBURY 22.

**THE LONDON AERODROME, HENDON, N.W.**

Wires—'VOL PLANE' or  
'CLAUDIGRAM, LONDON.'



## The Lay Critic and Government Orders.

### The Free Trade View.

As the writer happens to hold political views which include planks from the platform of every existing political party, he may be absolved from party bias in drawing attention to the absurd and mischievous attempt of the *Daily News* to make the purchase of army aeroplanes a party question.

The *Daily News*, in a leader on Friday last, accused the British constructors of endeavouring to introduce "protection" for the aeroplane industry, cheerfully ignoring the fact that it is a political axiom of all parties that all war material must be manufactured at home. Would the *Daily News* advocate the purchase of battleships from Germany because a German ship costs less than ours, or would it support the purchase of submarines from France because France started building submarines two years before we did, and may therefore be supposed to have more experience in their construction? Would it insist on the importation of cavalry horses from Russia in time of peace, to the ruination of the British horse-breeder, simply because horses are cheap in Russia?

Adding insult to injury, the *Daily News* states definitely that British aeroplanes are "notoriously inferior" to those of foreign construction, which statement either displays the abysmal ignorance of the *Daily News'* writer, or is a deliberate and malignant untruth.

When the War Office competition takes place the writer would be glad to be able to back a number of British machines against anything that is made abroad. If it is purely a question of load-lifting, the twin-engined Short biplanes, the big "Military" Bristols, and the Howard-Wrights, will be well able to hold their own in power and speed against the French biplanes; and if it is a question of speedy single or two-seater monoplanes, the new Bristol, Vickers, Flanders, Blackburn, Valkyrie, Radley and Moorhouse monoplanes, not to mention the first Short monoplane, now approaching completion, will be close up to the winner, and it is quite as likely that one of them may win. If the tests are such as they should be, the engine-in-front biplanes, such as the Avro and those being built by the Valkyrie Co., Short Bros., and the Bristol Co., will prove their equality with the French, and it may interest the *Daily News* to know that the Avro was the first successful machine of this type, which is now being produced by such eminent French firms as Bréguet, Gouppe, Astra and R. E. P.

Considering that the whole of this agitation, started by THE AEROPLANE, has, as one of its chief incentives, the object of making work for British workmen, the attitude of the Liberal daily is peculiar. Perhaps that interesting paper would prefer to see the machines built by indentured labourers from Western Africa.

It is also worth pointing out that by opening big money prizes for foreign competition, one might consider that we are giving an opportunity to foreign countries to improve their war material at our expense. This is not a party question, it is one of national defence and national employment.

### A Protectionist View.

To quote Mr. Bonar Law on Monday last, "It

takes all kinds of people to make a world, but I should like to say, if it were not impossible, that it takes even more to make up the party opposite." Verily there is no pleasing some critics. The "free trade" attitude is noted above, and now comes Mr. Massac Buist, who, in a long and interesting article in the *Morning Post* on Tuesday, makes his first appearance in this campaign for aerial defence. Says he "These are not opportunites for this, that, or the other manufacturer to reap some personal profit . . . The point needs ventilating because a section of the Press, including part of the technical branch, has voluntarily reduced its influence to little or nothing by adopting the foolish policy of mixing matters of commerce or politics with matters of national efficiency . . . The truth is, the proposition for the Government is not whether British capital and labour shall be supported by placing orders here or there, but whether the Services shall be supplied with the latest and most approved of the world's products. . . . In other words, it is time a protest was made against the policy of badgering the Government to buy this, that, or the other special type of aircraft, whether English or foreign made, immediately it gets abroad that it is going to spend a few pounds more on equipment. The result of these tactics in the past has been that of the mere shadow of an equipment possessed by the Army."

Agreed, Mr. Buist. For instance, it was just such a clamour as this present one which resulted in the purchase of the *Clement Bayard*, and the conditional purchase of a *Lebaudy*, which at one time bore the name of the *Morning Post*. Where are those terrible instruments of war at present?

Agreed also, as to the super-importance of "national efficiency." While those patriots who write of aviation in the daily Press were calling in clarion tones, to the extent of several columns per diem, for their readers to increase national efficiency by inspecting the assorted American, French, German, and English motor cars at Olympia, a sordid, commercially-minded aviation paper called *The Aeroplane* was endeavouring, with the support of one C. C. Turner, in an equally sordid journal named the *Observer*, and a few letters and articles in business papers such as the *Evening Standard*, *Express*, and *Pall Mall*, to persuade the Government to buy British-built aeroplanes, on the grounds that if British workmen were not trained and British factories were not organised now, for the manufacture of war planes, this country would be unable to obtain machines in time of war, and so would suffer immense unnecessary loss on the battlefield, owing to inferior scouting service. Political economists tell us that every human life is worth so much in hard cash to the State, and what, therefore, can be more commercial than an endeavour to save human life? Why, the attempt is worthy of a mere stockbroker.

No! let us increase national efficiency by hardening our population. Let our workmen learn to live without work, our manufacturers without orders, and let our Army be made efficient by leaving it to fight without efficient weapons, so that the weaklings may be killed off. But by all means let us have the most up-to-date aeroplane, made abroad, so that we may see what other people have got.

# THE BRITISH-BUILT DEPERDUSSIN MONOPLANE

—2 and 3 seater, Military Type—

With 80 H.P. ANZANI or 100 H.P. GNOME, is now being manufactured in

**OUR LONDON WORKS.**

The **DEPERDUSSIN MONOPLANE SCHOOL** at Brooklands

has more Machines than any other Monoplane School in England.

THOROUGH TUITION ON  
DEPERDUSSIN MONOPLANE **£75.**

Including all Expenses, Breakages if any, and Third Party Insurance.

**A Prize of £15 is offered to all Pupils who obtain their Pilot Certificate without Breakages.**

**The British Deperdussin Aeroplane Syndicate, Ltd.,**

'Phone : 280 Gerrard.

**30, REGENT STREET, LONDON, S.W.**

Wire: "Monodep, London."

## HOWARD T. WRIGHT



**110, HIGH STREET,  
MANCHESTER SQUARE, W.**

Telephone  
8574 GERRARD.



*Eight Types*

### Monoplanes

From **40** to **80** miles per hour

### Biplanes

From **36** to **50** miles per hour



Catalogue on Application

**Winner of De Forest Prize**



## The Finish of the French Trials.

The French Military Trials are at last over, and they have certainly given us excellent lessons, though as trials they have been somewhat farcical. There is, however, some consolation in knowing that the three prizes have gone to three of the very best machines in the world—the Nieuport, Bréguet, and Deperdussin. It is only to be regretted that, owing to the very worst of luck, the Blériot does not figure among the prize winners. However, M. Blériot has his reward in that, during the competition and after the unfortunate accidents which put him out of it, he received orders from the French Government for something over 100 single-seater machines, so he has not done so badly.

First of all, let it be distinctly remembered that this French military competition was not a test to discover the "best type" of military aeroplane; it was simply and solely organised to discover several "best" machines most suited for specific objects, the objects being primarily the destruction of dirigibles and their skelters, and secondarily the carrying of heavy loads, whether in the shape of wireless installation or explosives.

The French Army knows too much aviation to imagine that any one machine can be absolutely best for all military purposes.

The tests finally finished on the 26th. Weymann stood by his previous performance, which was obviously unapproachable by any other competitors. Prévost, who would have run him uncommonly close, made an attempt to better his previous performance on the 13th, when he lost his map and his way. Unfortunately, he was brought down by fog, and so was unable to complete the course. Védérines started on the other Deperdussin, but came down 25 kms. from the start. Fischer, on the fastest of the Farmans, also made an attempt to improve on his previous time, but was brought down by fog. Consequently, the only two machines to complete the course where the two Bréguets, driven by Moineau and Brégi. These two machines, at last thoroughly tuned up, were able to prove their real worth.

The following table gives the full description of the machines and their speeds, as well as the enormous sums expended by the French Government in adequately equipping this particular portion of their aerial fleet.

### The Winning Pilots.

1. WEYMAN.—Nieuport monoplane, 100 h.p., Chauvière propeller. 300 kms. in 2 hrs. 33 mins. 52 3-5 secs. Speed, 73 m.p.h.

### German Activity.

The German War Office has decided that every fortified point, beginning with the eastern and western borders, on the country's frontiers shall be provided with its own detachment of aerial scouts. To this end the military aviation corps is at the beginning of next year to be decentralised and stationed in detachments at all the strategic points. Sheds, accommodating six to twelve machines, according to the importance of the position, will be erected, and will be provided with a staff of military pilots and observers. In addition to this every important naval harbour and coast town is to be provided with a specially large detachment. This disposition, in case of war, will have a double advantage, for while the aerial scouts will be able to give early warning of an enemy's approach upon a strategic position, there will always be at hand a means of counteracting any attempt of an enemy to destroy fortifications from above by means of his own flying machines.

The cost of providing the sheds and other equipment is estimated, for the first year, at £450,000, and this amount will be asked for in the military budget which is to come before the new Reichstag. The military flying schools at Döberitz will continue to be the training ground for young officers detailed for aerial work, who, immediately on making themselves efficient as airmen, will be dispatched with their machines to their future posts on the frontier. At the present moment Germany has something like 100 military pilots.

### A New German Machine.

The *Kölnische Zeitung* describes a new monoplane built by Plagge and Court as an aerial torpedo, intended to destroy other aircraft. It is shaped like a torpedo, the chief object being to minimise air resistance. The shape is different from anything else in aeronautic science, but it is said that it is something like the Nieuport. It is intended purely for military purposes, and, like almost all German machines, it is a two-seater.

2. MOINEAU.—Bréguet biplane, 100 h.p., Chauvière propeller. 300 kms. in 3 hrs. 9 mins. 16 secs. Speed, 59 m.p.h.
3. PREVOST.—Deperdussin, 100 h.p., Rapid propeller, 300 kms. in 3 hrs. 21 mins. 5 secs. Speed, 55 m.p.h. (real speed of machine 67 m.p.h.)
4. BRÉGI.—Bréguet biplane, 100 h.p., Chauvière propeller. 300 kms. in 3 hrs. 26 mins. 47 secs. Speed, 54 m.p.h.
5. FISCHER.—Henri Farman biplane, 100 h.p., Chauvière propeller. 300 kms. in 3 hrs. 33 mins. 50 secs. Speed, 53 m.p.h.
6. BARRA.—Maurice Farman biplane, 75 h.p., Chauvière propeller. 300 kms. in 3 hrs. 56 mins. 13 4-5 secs. Speed, 47 m.p.h.
7. RENAUX.—Maurice Farman biplane, 75 h.p., Chauvière propeller. 300 kms. in 4 hrs. 8 mins. 40 secs. Speed, 45 m.p.h.
8. FRANTZ.—Savary biplane, 60 h.p., Chauvière propeller. 300 kms. in 4 hrs. 27 mins. 49 secs. Speed, 42 m.p.h.

### The Sums Won.

Weymann's Nieuport:—

	Francs.
Purchase of winning machine ...	100,000
Purchase of ten similar machines at 40,000 frs. ...	400,000
Premium of 500 frs. per km. above 60 kms. per hour, if all ten do the same speed ...	280,000
	780,000 (£31,200)
Moineau's Bréguet:—	
Purchase of six machines at 40,000 frs. ...	240,000
Premium for exceeding 60 kms. per hour ...	105,000
	345,000 (£13,800)
Prévost's Deperdussin:—	
Purchase of four machines at 40,000 frs. ...	160,000
Premium for exceeding 60 kms. per hour ...	59,000
	219,000 (£8,760)

[N.B.—As the Deperdussins will probably average 65 m.p.h. (110 kms. per hr.), the last named premium is more likely to be 100,000 frs. than 58,000, which would bring the money up to £10,400.]

The pilot is so placed that he can see right over the wings, and the passenger is able to see through wings, which are fitted with Cellicon windows. The seats are arranged so that the pilot and passenger are protected from danger of fire from the motor. The wings are so fitted that each can be detached simply by undoing eleven bolts.

### Greece Taking an Interest.

The Greek Ambassador at Paris recently paid a visit to the Maurice-Farman school at Buc, and after a close examination of the machines, went for a flight over St. Cyr, Trappes, and the neighbourhood, the pilot being Maurice Farman himself.

### The Sommer Weight-Carrier Again.

The Sommer biplane has again been doing great weight-lifting flights. On the 13th Molla flew from Reims to Mouzon with four passengers, doing the 69 miles in 1 hr. 12 mins., or 57 miles per hour. Unfortunately, there is no information as to engine power, but it is undoubtedly a great pity that Sommer should have been prevented by ill-luck from taking part in the military trials. It will be remembered that the Sommer machines were all smashed up by a gale while being transported by road to Reims.

Sommer's machines are doing well in various directions just now. First there were last week's weight-lifting exploits, and now we have Bathiat doing 39 miles in half an hour on the monoplane, and Molla on the steel biplane flying steadily in a 30-mile wind.

### Across Country in Australia.

It is reported that an Australian aviator named Hart, who is said to be the first Australian to win his pilot's certificate, flew from Perth to Sydney, forty miles, in sixty-five minutes. Presumably he is the first man to take his ticket in Australia, for, unless there is some mistake, Mr. Busted, the Bristol pilot, was the first native-born Australian to take a certificate.

There is no propeller beats the AEROSPEED. We are the makers.

Then send to

**E. MELCOMBE, HARPENDEN, For all accessories.**

Large stock of wood, free from de cts, knots, etc.  
Hickory & Silver Spruce, up to 3/4 in., 24 ft. 1/0  
American Ash, Poplar, and Birch, 48 ft., 1/0

**ELASTIC** Stamp for Catalogues

7/8 sq., 1 1/4 d. per yd. or 1 l d. per dozen yards  
3/4 strip (about), 1 d. per yard, 10 d. per dozen yards.  
1/2 " " 1 1/4 d. " 1/3 " " "  
1/4 " " 2 1/4 d. per yard, 1/10 " " "

PARCELS MADE UP FROM 2/6 TO £1 1s. 0d.



**Be Prepared for Accidents**

**'Tabloid' First-Aid**

(Trade Mark) BRAND

Extremely portable outfit of timely bandages  
dressings, restoratives, etc., for Aviators.

From pocket-cases to aerodrome equipments.

No. 715. Size: 7 1/2 x 4 1/2 in.  
1 of 6 of all Chemists

BURROUGHS WELLCOME & CO., LONDON

THE

## FLANDERS MONOPLANE

**60-80 H.P. Green Engine** (Circuit of Britain Type). One, two, or three seaters.

Pupils taught on monoplane with double control. **£10** returned in event of no damage.

L. HOWARD-FLANDERS & CO., Brooklands, Weybridge.

**TUITION**

**£75**

**INCLUSIVE**

**LAST  
DAY**

Last Day of Special Offer  
of Twelve 35 h.p. Green  
Passenger-carrying "Avro"  
Biplanes or Monoplanes at  
£400 each, complete (usual  
price £600), expires to-day  
See last week's issue for full  
details, and wire or phone

**A. V. ROE & CO.,  
Brownsfield Mills,  
MANCHESTER.**

Telegrams: TRIPLANE. Telephone: 698 CENTRAL.

## BLACKBURN

**MONOPLANES &  
PROPELLERS**

For Durability, Stability, and Efficiency.

**TUITION.**

Write for prices and particulars to—

**The BLACKBURN AEROPLANE Co.,**

Phone: 2823 Central. **BALM ROAD, LEEDS.** Tel-grams: "Propellers, Leeds"

## CLIFT AERO MAPS

Used in the "CIRCUIT OF BRITAIN" and all cross-country  
flights. Clift Map were used by Vidart, Kimmerling, Valen-  
tine and others in the European Circuit, and by the majority  
of flyers in the "Circuit of Britain."

## CLIFT Aero Compasses

The Compass certified to be the best by Latham, Valentine,  
Pizey, Fleming, Barber, and other experienced aviators.

**"Necessities for the  
"CIRCUIT OF ANYWHERE."**

For terms, write

**ERIC CLIFT, c/o 'The Aeroplane,' 166, Piccadilly, W.**

## MICHELIN £500 TROPHY WON ON A

The Green Engine, always to the fore when records are to  
be made, has again proved its undoubted superiority. Cody—  
using his new type machine fitted with a 50-60 h.p. Green  
Engine—flew 261 miles 800 yards and thus secured this  
blue ribbon of the air. YOU cannot do better than to follow  
the lead of the pioneers.

Write for particulars to

**The Green Engine Co.,**

Sole Licensees under Green's Motor Patents Syndicate Ltd.,  
55, Berners Street, London W.

Makers for the Patentees: THE ASTER ENGINEERING Co., LTD.

**GREEN  
ALL - BRITISH  
AERO  
ENGINE**

E.H.G.



## AIR CURRENTS.

**The Terrors of Aviation.** \*s s \*s s \*s s  
We were a very jolly little party—three aviators and a journalist—and we were just ordering tea when Pemberton strolled in.

Pemberton also is an aviator—very much so. He was first taught to fly at Issy in the good old French way, which consists of introducing the pupil to his mount and leaving the two to fight things out between them. Pemberton got the best of it. Within a week he had got that aeroplane so that it would eat out of his hand, and now—well, it would never surprise me in the least to hear he had been flying two or three machines at once.

"Yes, tea," he said, sinking back in a cushioned wicker chair and affording us an excellent view of the *recherché* hosiery which a Farman rudder-bar displays with such admirable effect. "A large pot, please, very strong; and toasted muffins, with plenty of butter on them. I'm told butter is so good for the nerves."

The word rather surprised me. We know Pemberton has nerve enough, in all conscience; but—nerves?

"Has it ever struck any of you," he asked, helping himself to a liberal allowance of cream, "that flying is a dangerous sort of business?"

We all looked at him in silence, until Wilkinson (who has a pretty gift of repartee) said, "Well, you ought to know!"

"Yes, really. Now just think. Two flimsy planes," he went on, in a kind of dreamy recitative, "consisting of fabric stretched over a wooden frame; a motor whirling round with the speed of an electric fan; half a dozen rudders of different sorts—these are the few structural elements of the delicate machines in which we reckless men risk our lives to win purses offered by newspaper owners."

Here the arrival of the muffins interrupted him; more than any of us would have ventured to do. "Oh, but hang it all, Pem!" said young Smiffkins. "Up-to-date machines aren't so rotten as that. What about—"

"My dear boy," said Pemberton kindly, "if you think up-to-date machines are any better than the old ones you are mistaken. Since the 6th of July, 1908, when Farman won the Armengaud prize for flying a circular kilometre, there has been a wonderful improvement in the handling of machines—modesty forbids me to add that it was after that date I learned to fly—but beyond that, little to boast of. Stagnation—stagnation is the only word for it."

"But the serious thing about aviation," he continued, re-filling his teacup, "is the shocking time we have of it. The preparations for a great race are in themselves a severe tax on a strong man's nerves. In a score of hangars mechanics are tightening wires, repairing motor troubles, pouring castor oil into petrol tanks, with almost feverish haste. Aviators stalk up and down, for the most part smoking one cigarette after another, though sometimes, in their agitation, they consume three or four at once. To prevent the throbbing machine from leaping forward, from three to six men must cling to the framework and dig their teeth into the ground—I mean they dig their feet into the ground in the teeth of the hurricane generated by the glittering propeller and roaring motor; and when the pilot nods or gestures they release their hold with the readiness of men who have been restraining a wild beast. Just as one so often sees a raging African lion with half a dozen native beaters hanging on to his tail while the hunter hastily jams the last remaining cartridge into his kodak."

"Then the aeronautic lion gets off. He slowly worms his way into the blue. The temperature is that of a cold winter day, even though on the ground thousands may be mopping the perspiration from their brows; you would think their united exertions ought to warm the air for him, but they don't. He has horrible delusions—thinks he sees the Flat-iron Building before him, or some frightful thing like that. (But aviation is not to blame for all these things; for instance, the six sky-blue guinea-pigs that Hank P. Clamsbeller saw sitting in a row on the edge of his front elevator.) It grows colder still. The flask of home-made lemonade in his pocket is a block of ice; the propeller revolves more and more slowly, until it stops altogether—frozen hard and stiff. He can go no further."

"What mechanical fact is now driven home to us? This—*Motion is the secret of an aeroplane's flight.* Only remember those few simple words, and next time anyone asks you, 'Why does an aeroplane fly?' you won't disgrace your profession by being unable to tell them."

"So our aviator (or should it be airworm?) has to come down. In seven sickening seconds he has glided to earth, in

that long, swift, hawk-like swoop which makes a coward of even the bravest man, and steps from the machine like a torpid, hibernating snake.

"And then what becomes of him? Where are the old, worn-out aviators, the heroes of three months ago? In hydros, nursing homes, private asylums? Worse than that. The record-breakers of yesterday are the staid manufacturers of to-day. Shattered in mind and body, they are building more aeroplanes."

On the youthful countenance of Smiffkins there developed a manifestation which, in the case of any but a Hero of the Air, I should have described as a grin.

"Oh!" said he. "Then I suppose a person who shall be nameless has had that handy little toolshed fitted up as a nice quiet place to retire to when he has *quite* finished wiping down the great American continent with the remains of any aviators they have left over there?"

"You let your tongue run away with you, young man," said Pemberton, serenely. "I don't know who you mean; but I should certainly think an engineering shop in full swing was an ideal spot for a rest-cure. I mean to try it myself some day—if I ever get time." And he extended a muscular arm for his fourth cup of tea. "The dare-devil of yesterday is the shattered wreck of to-day. Who's game for another lot of muffins?"

And meeting McMurdo's stultified gaze (McMurdo has no sense of humour whatever), he added: "No, I'm not quite a wreck yet. But it's a wonder I'm not; I've been reading an article on aviation called 'Dangers of the Air,' in an American weekly paper."

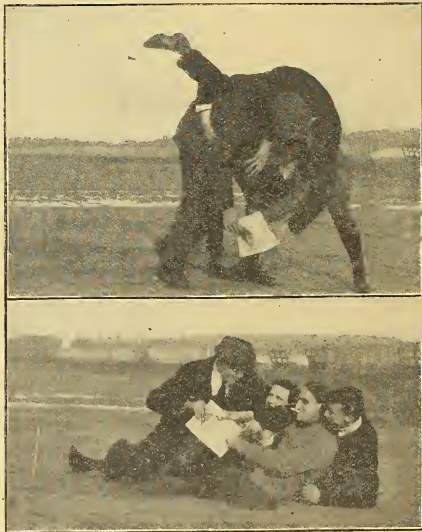
M. L. E.

### Unfounded "Remous."

That the next public Minister to be appointed will be the First Lord of the Aviators.

That Hall Caine is engaged in a course of model flying in the Isle of Man preparatory to writing his next book, *The Manxplane, or, The Machine Without a Tail.*

That at the forthcoming opera season Wijnmalen will play the title-role in an up-to-date revised version of *The Flying Dutchman.*



A True Compliment:—Two stages of a catch-as-catch-can discussion as to the possession of a new number of "The Aeroplane." Participants: Messrs. Young, Sabell, Raynham, and Sippe.

# Points for Prospective Pupils.

By "VENTRE-A-TERRÉ."

[The reader of this article is assumed to be a prospective pupil, and is therefore, addressed in the second person, which, the illiterate writer hopes will make his meaning more clear.—VENTRE-A-TERRÉ.]

First, oh, aspiring "birdman," consider whether it is really worth disburshing much gold in learning to fly whilst other excellent means of excitement can be had, such as Alpine climbing, hunting, etc. Flying is safer, but it is also cheaper, and, therefore, possibly less attractive.

Secondly, consider which type of machine you wish to learn, paying but little heed to those who advise any particular type simply because it is supposed to be easier to fly, remembering that, if the fees are the same, the harder the machine the more you learn, and that the easiest to fly is not necessarily the cheapest to smash.

Thirdly, consider how you may best expend the time and money at your disposal, and it is with regard to this third point that the writer hopes to give the assistance of experience gained as pupil and instructor with four schools in this country.

Having decided which flying grounds are convenient for you from a point of view of locality, you are advised to write to all the schools at work at these grounds and ask for terms, together with a copy of their form of agreement with pupils. It is most important to compare the agreements, as they vary in detail very considerably.

Having now selected the "probables," pay a visit, preferably incognito, to them, and have a look round to see how the place appears to be run; make all inquiries you can (not forgetting the facilities for handy lodgings). As you can find out the real opinion of any pupil already at work, go "nap" on it; a satisfied pupil is an infinitely better recommendation than any amount of glowing promises on paper.

The charges to a pupil may in general be divided into two parts:—

- (1) For instruction and use of machines, which may range from £30 to £75.
- (2) Making good damage to machine, or insurance against damage to machine.

As regards (1), there is nothing in a high or low fee, *per se*, to damn or recommend a school; the fee should, however, bear some relation to the condition of tuition as shown later.

As regards (2): Insuring against damage by paying a lump sum down, part of which is sometimes returnable if little damage is done, has the great attraction of "limited liability"; it is naturally rather expensive, and loses some of its beauty in comparison with an agreement sometimes obtainable, in which the liability for any one smash is limited to the amount of the deposit against damages made by the pupil previous to tuition commencing.

If you elect to pay for damage done, with or without your immediate liability limited to your deposit, you must be extremely wary about this point: At what rate are you to be charged for repairs? If you are paying reasonable tuition fees you should be charged at cost price for repairs, *viz.*, men's time, material, and a fixed percentage for establishment charges. Fixed prices should be quoted for replacement of definite parts of the machine which are individually damaged beyond repair; for instance: A, who is a pupil of B and Co., may have a smash and receive a bill for from two to three times the amount that other firms C and Co. and D and Co. can quote for a similar repair or replacement equally well carried out, C and Co. and D and Co. being experienced in same types of machines as B and Co.

Or, again, E may pay an unusually small tuition fee to F and Co. and find that on the least damage to the old "school 'bus," and where a repair is possible, he has to pay for a replacement by a new part at the maker's list prices, whilst the old part is quietly repaired and replaced a few days later for G to do the same thing; F and Co. can soon turn an old "school 'bus" into one "stunt machine," plus one school 'bus, in this way.

The next little point is "provision of machines"; one school may say quite openly that they keep one machine for school use, and one only. If it gets damaged it will be repaired as quickly as possible, but till repaired you must wait. Under these conditions you will naturally expect to pay a comparatively low fee on account of the delays which are liable to occur, but if you are not pressed for time, and money is a consideration, the school is none the worse for this reason.

If, on the other hand, the firm makes a great point of its

ample supply of machines, it might be well to ask them if they would make you a refund for every flying day that a machine is not available at the ground chosen; you may easily get your "ticket" for nothing on the basis of £1 refund per day! [Perhaps not!—En.]

Remember that you must have everything "on paper" to be even reasonably safe.

To illustrate my meaning, especially with regard to provision of machines, take the following cases, all, of course, imaginary: One A parts with his fee to B and Co., who promptly sell their only available school machine to C. Of course, this sort of thing could not happen, but what if it did?

Again, a certain D joining E's school, and seeing many machines in E's sheds, might be rather sad to discover that the one which is brought back to the shed in instalments next day is the only one available for the pupils to flutter on, the remainder being "stunt machines."

Or even the case of G, who, after his smash, discovered that there were plenty of other machines belonging to the firm elsewhere! Or, lastly, the case of poor K, who, after joining XYZ and Co., finds X, Y, and Z require all available machines and instructors for an organised attempt to delay his Majesty's mails!

I strongly counsel you, oh, patient one! who hath followed me thus far, to remember that the commercial value of the instruction in care and maintenance of machines and engines, which may be "thrown in" by your agreement, is worth something less than 33d.; the instruction is likely to consist in the privilege of hanging round the sheds and giving the mechanics a hand. The shed next door will be delighted to give you the same instruction for nothing if you are capable of profiting by it. Besides, if any organised attempt is made to teach you anything, how little will you learn in the average time necessary to take your "ticket."

One point on which I am very chary of saying anything is that which arises when the firm and pupil wish to part before the termination of instruction; to have an agreement which is fair to both sides and yet prevents fraud on either part, is hard to draw up. Perhaps the best plan is for the pupil to be able to get a refund based on the amount of actual time he has had on the machine, as otherwise the firm have no inducement to hold on to the pupil; at the same time the pupil is often chiefly to blame himself, and it is a matter too often for the lawyers.

I counsel you not to be in too great a hurry to take your ticket, but at the same time to play the game and go for it when you are properly ready. Certain schools are rather over-anxious to get their pupils through quickly, and a case has occurred to the writer's knowledge of A finishing his "ticket" flights with under an hour's air experience as either passenger or pilot, A knowing enough to be able to give an excellent imitation of an inebriated rook with a charge of shot in its crop.

There is one last way of learning to fly which has much to commend it, and that is to hire a machine. You should not have much difficulty in hiring the very best machines at varying prices, of which £5 an hour may be taken as about a good average price. You will have no difficulty in getting instruction and advice from all the ground experts, and will get miles more fun in this way. You are quite likely, also, to get more than double the air experience of the usual pupil for the same money, and though you will have to undertake unlimited liability for damages, and may be asked for a rather larger deposit than usual, there is no reason why the really careful beginner should not find it the cheapest way in the end.

In conclusion, remember that you must have everything "on paper" to be even reasonably safe. I cannot too strongly impress on the would-be plane-smasher that a solicitor's fee is well expended in having every clause of your agreement gone into thoroughly and their bearing on any points I or others have raised explained. *Caveat emptor*, and good luck to you.

[The Editor feels called upon to apologise for his contributor's style, which is not quite according to the canons of literary art. But, as the opinion of one who has been through several mills, his views are well worthy of consideration. It may also be well to explain that a "stunt machine" is one kept simply in order that experts flyers may do "stunts" on it, "stunts" being aerodromes for fancy flights which require considerable skill and a machine and engine in perfect tune.]



## The Week's Work.

## Monday, November 20th.

**BROOKLANDS.**—Pizey on Bristol teaching Capt. Gordon landing, then up with Warren, a new pupil. Capt. Gordon next started doing straight flights alone. Later Pizey up with Mr. Nesham as passenger, and then Lawrence flying well, to keep in practice. Walton-Edwards Colossoplane out in morning, testing. Raynham doing circuits on Avro-Viale, not quite tuned up. Sopwith doing circuits on new Martin Handasyde, with 65 h.p. Antoinette engine, which is very fast and seems to handle well. Quite as handsome as the Antoinette, and altogether a fine job.

Bell for several circuits on Deperdussin racer, and Sabelli, Baldwin, and Wilkins on taxi. Weather gusty and dismal, so a good day's work.

**THE PLAIN.**—Bad morning. In afternoon Jullerot first up, and, after trial on No. 66 Bristol, school work started off by Smith-Barry making two solos, as also did Dacre. Busted up with Lieut. Borton, new pupil, as passenger, for twenty-five minutes.

**EASTCHURCH.**—Ground fog throughout island; not sufficiently thick to prevent flying, which was started at about 8 a.m. by Lieut. Samson on Blériot, soon followed by Capt. Gerrard and Lieut. Longmore, who made several long flights on Short two-engine machines, this being first time they have actually piloted them.

## Tuesday, November 21st.

**BROOKLANDS.**—Deperdussins busy. Sabelli, Baldwin, and Chattaway at work on taxi and brevét machine, and Bell also out. Kemp testing Flanders with new Green engine, and doing very well. Sopwith flying nearly an hour, in short stretches, tuning up Martin-Handasyde. Raynham doing better and better on Avro-Viale. In early morning Pizey up with Warren and Capt. Gordon alternately as passengers on Bristol. Then Gordon two straights solus, in excellent style, followed at once by two circuits, with beautiful landings. Capt. Gordon has the makings of a fine flyer, and evidently flying is going to be another of the multifarious activities of the Royal Marines, for the other R.M. aviator, Capt. Gerrard, has already beaten a world's passenger record on his Short biplane. Pizey then up with Major Benwell, who has been away a good deal. Then Lawrence up 1,000 ft. in 4 mins. —good climbing for a biplane.

Fine performance by Fleming, who took his Bristol up to 2,000 and odd feet, shut off his engine, and took  $3\frac{1}{2}$  mins. to glide down. Pizey out testing No. 29 Bristol. Capt. Gordon then doing circuits, Fleming up with Major Benwell as passenger, followed by Pizey with Hitchcock as passenger, and then Lawrence up alone, flying well for half an hour. Another good day in spite of weather.

**THE PLAIN.**—Busted out for trial, followed by Jullerot. Weather fairly favourable. Jullerot took Lieut. Borton; same pupil also with Busted later. Smith-Barry and Dacre each did two solos with excellent skill and judgment. Lieut. Head also went up for one circuit, landing in fine style.

In afternoon Prier gave splendid exhibition on new Bristol passenger monoplane. After three long flights he took Capt. Fulton and M. Grandseigne as passengers. Lieut. Head, Dacre, and Smith-Barry each up for solos, doing fine figures of eight, finishing with solo flights from good heights. Pixton up with Lieuts. Porter and Borton for passenger flights, both pupils showing marked aptitude.

**SHOREHAM.**—In morning Lieut. Porte, R.N., made two flights on passenger-carrying Deperdussin. Mr. Richard Preston, of Brighton, taken up on second journey as passenger. Short flights made on Blériot monoplane belonging to Chanter School. Weather ideal. De Villiers out for short flight in morning.—C. A. C. WINCHESTER.

**EASTCHURCH.**—Great improvement in weather, although steady wind all day. Lieut. Samson again out on Blériot, and at same time Lieut. Dunne was flying his automatic stability biplane, showing great improvement in capabilities of machine, which now gets up quite easily and flies steadily. In afternoon a race arranged between Capt. Gerrard on the Short tandem twin and Lieut. Longmore on three-propeller machine, course being to Laysdown and back. Test not quite conclusive, owing to Capt. Gerrard rounding different point to Mr. Longmore, but slight advantage shown in favour of three-propeller machine, which did slightly over 50 m.p.h. Afterwards Mr. Longmore made first flights on Blériot, handling machine with skill and making six or eight short flights during his first two hours' experience.

Lieut. Samson also took up three-propeller machine, and made, at first attempt, splendid flight lasting forty minutes,

during which he rose to great height. Finish of this flight noteworthy as giving practical illustration of advantages of having two engines. When over Brambledown, about four miles from Eastchurch, at some 600 ft., magneto on back engine came loose and worked out of gear, upsetting thing and stopping engine suddenly. Being used to one engine, Mr. Samson, on hearing noise of gears out of order, instantly prepared for *vol plané*, and scanned ground for field to land in. This, however, unnecessary, for machine continued to fly well with one engine, and, descending at very slight angle, Mr. Samson landed safely in aerodrome, having plenty of room to turn and alight close to shed.

**HENDON.**—Strong breeze in morning, when Capt. Loraine brought out Valkyrie racer and made several circuits, flying remarkably well.

## Wednesday, November 22nd.

**BROOKLANDS.**—Far the busiest day of the week; much flying and interesting smashes. Bell on Deperdussin brevét machine flying well. Chattaway started for brevét, but got up in middle of ground, not allowing room to come down if engine stopped, which it did, resulting in discontinuation in sewage farm without much damage. Sopwith on Martin-Handasyde flying well alone, and then took up passenger for couple of circuits, machine lifting and flying well. Landed while still turning, with centrifugal drift on, so came down on one wheel, rolled across on to other, which broke off, end of axle digging in and pulling chassis into interesting, but ineffective, shape; no one hurt. Mr. E. V. "Snith" on Big Bat Blériot going quite well around and about over the sheds, but apparently tried to land 20 ft. up in air. Flattened out angle of machine, switched off, pancaked, switched on, dived suddenly, buckled a fork, broke the propeller, pirouetted on one wing-tip, "cut the cloth" rather badly, collapsed some more of chassis, and finally wound up in front of the Blue Bird, absolutely unhurt, after the most prolonged smash on record. Everyone much relieved, as the pilot is generally liked, and is known to have done little flying himself so as to see after getting the Birding machines into good condition for his partner, Mr. Astley, to fly, though luck has been badly against the Birdlings and the Big Bat all through the year. Dukinfield Jones, who has joined Flanders Co., doing straight flights, broke chassis strut in landing, this soon repaired, and then Kemp, on same machine, buckled one wheel, both without doing any material damage to flying portion of monoplane, which seems to stand almost anything. Snowden-Smith out on little Blondeau biplane, Ducrocq went across country in morning, Raynham still flying Viale-Avro with increasing success.

Fleming up with Warren, testing air on No. 29 Bristol. Capt. Gordon then promptly did two full figures of eight in perfect style. Major Benwell doing straights alone. Pizey up with Warren, and then with Gordon, followed by two more



At the Bristol "Home" at Pine Cottage Weybridge: Capt. Gordon, R.M.L.I., H. R. Fleming, and Major Benwell.

eights by Capt. Gordon. Major Benwell doing more straights. Fleming up testing No. 65 Bristol, and, while there, Pizey, on other Bristol, lifted two mechanics to 400 ft. for two circuits of aerodrome. First time a British machine has performed the feat of lifting three people to any considerable height. Later Capt. Gordon doing good circuits in a gusty wind, and then Pizey up with Warren.

**THE PLAIN.**—Pixton out early testing Bristol, afterwards taking Lieuts. Porter and Borton. Smith-Barry out for high flight, also Dacre. At 11.30 a.m. Smith-Barry off for cross-country flight. At 2.30 Fullerot up with Lieut. Borton. Busted took Lieut. Porter for two flights and Pixton took Lieut. Borton. Smith-Barry and Dacre then passed tests for certificates, observed by Lieuts. Reynolds and Wyness-Stuart. Both pupils performed in exceedingly creditable style.

**HENDON.**—Thick fog made flying impossible before 9 a.m., when school pilot made trial flight before allowing pupils to go out. He made several circuits, and terminated with *vol plané* with engine completely cut off. Busk then mounted machine and got half an hour's good practice, and made successful straight flights. Meantime, Mr. Barber went up on Valkyrie racer and did numerous circuits before giving up this machine to Captain Loraine. Latter put up fine exhibition flight, including numerous spiral *vol planés* and many sharp turns. He descended with long glide, after being in air for half an hour. Later, wind became strong and prevented further flying during week.

## Thursday, November 23rd.

**BROOKLANDS.**—Bell out for a few minutes on Deperdussin. Other monoplanes under repair and weather too bad for biplanes.

## Friday, November 24th.

**BROOKLANDS.**—N.E. gale all day.  
**THE PLAIN.**—Wind rather puffly, but, in evening, Busted, after making a trial, up with Lieut. Borton for tuition flight.

## Saturday, November 25th.

**BROOKLANDS.**—More N.E. gales.  
**BARRHEAD AERODROME.**—R. W. Philpott, school instructor, just trying Caledonia monoplane before handing over to pupils when cylinder blew off, narrowly missing his head. He was able to accomplish safe landing, and new engine is now being fitted, i.e., 35 h.p. V-type air-cooled.

Mr. A. E. Pickard, a Glasgow music-hall proprietor, has offered prize of £20 to first aviator who, flying from outside Glasgow, lands on Glasgow Green. Only stipulation being that flight must be done on Scottish-built aeroplane.—F. NORMAN.

**FILTON.**—Hotchkiss out testing Bristol biplane which is going to India for Lieut. H. H. Harford, R.A. Flew for half an hour, machine behaving beautifully in spite of very puffly wind.

## Sunday, November 26th.

**BROOKLANDS.**—In morning Pizey out on Bristol. Capt. Gordon two circuits with right-hand turns. Pizey, with Capt. Gordon, cross country over the golf course to Weybridge and back; very windy at 700 ft. Good practice for pupil holding lever. Capt. Gordon again solo for two circuits in 15 m.p.h. wind, with *vol plané* of 40 ft. In evening, when wind dropped, Pizey up with new pupil, Lieut. Longcroft; Capt. Gordon out at same time flying circuits; Pizey with Capt. Raleigh, of Essex Regiment (a prospective pupil). Pizey then up with an old pupil, Mr. Gibson, of Twickenham. Lawrence did good flight at 700 ft. at same time as passengers up with Pizey. Harold Blackburn, on Colossoplane, getting improved speed with new wind-cutter bows. Kemp out in evening on Flanders, flying well.

**SHOREHAM.**—Lieut. Porte, R.N., out on Deperdussin about midday in spite of stiff breeze. Did circuit of four miles. Gassler, of Chanter School, made several straight flights on Blériot. De Villiers, of same school, out rolling. England awaiting new engine.—C. A. C. WINCHESTER.

## Grahame-White's Appeal Granted.

The conference of the International Aeronautic Federation, which opened at Rome on Sunday, declared in favour of Grahame-White in his appeal against the decision of the American Aero Club in withholding from him the prize for the Statue of Liberty race. On behalf of the American Club, it was held that Grahame-White did not round the pylon. The conference considered it almost impossible to ascertain whether he did or not, and gave him the benefit of the doubt.



Capt. Gordon, R.M.L.I., on the Brooklands Bristol.

## Bristol International Activity.

It is not only interesting, but extremely encouraging, to note the international growth of the Bristol business. The fact that Lieut. H. H. Harford, R.A., is having a Bristol sent out to him in India has already been noted. Mr. Hart, who was the first Australian to take his certificate over his native soil (and did it on a Bristol), is making fine cross-country flights in Australia. Mr. Weston is doing great things on a Bristol in South Africa, and Lieut. Dahlbeck will shortly be heard of with another Bristol in Sweden. In addition to this, there are, of course, nine Bristols already at work in Russia, and this number is likely to be added to. It is more than probable that another European Power will shortly be testing the quality of Bristols—both monoplanes and biplanes—before long. Besides these, there is the fact that the first Chinese aviator not long since took his ticket on a Bristol. From this one may get a very good idea of the fact that the British and Colonial Aeroplane Company operates in a manner which is considerably more than merely British and Colonial.

## Interesting Nieuport Developments.

Mr. Maurice Ducrocq, just back from France, informs THE AEROPLANE that some very interesting developments are on foot in connection with the Nieuport business in Great Britain. Though he is not at liberty as yet to give details, he admits that a British Nieuport Company is to be formed with the least possible delay, and that very much more is likely to be heard of the machine in this country. It will be remembered that the Army already possesses one Nieuport, and Mr. Barrington-Kennett, who has been learning to fly it at the Nieuport School at Mourmelon, is quite enthusiastic about the flying qualities of the machine. THE AEROPLANE has always thought well of the Nieuport, and it is satisfactory to find its views endorsed by those who really know the difference between an aeroplane and a horizontal helicopter.

## The Royal Aero Club.

The annual dinner will take place at the Royal Automobile Club, Pall Mall, S.W. (by kind permission), on Thursday, December 14th, 1911, at 7.30 for 8 o'clock.  
At the meeting of the committee on Tuesday, the 21st inst., Mr. G. B. Cockburn was unanimously elected to fill the vacancy on the committee.

The following new members were elected: Capt. Oliver Barry Rupert Dickey, A.S.C., Lieut. Raymond Charles Dodgson, R.H.A., Claude Beverley Finlay, Charles Lincoln Freeston, Capt. Richard Scorer Molyneux Harrison, and Lieut. Charles A. H. Longcroft.—HAROLD E. PERKIN (Sec.).

## Another Fatal Smash in Germany.

Lieut. Loringhoven, who has been flying at Döberitz, was killed on the 25th inst. during a practice flight. He had cut off his motor at 1,000 feet, and was planning down. He had got down to 150 feet when a violent gust capsized the machine. It came down on one wing, and was completely smashed, Loringhoven being dead when extricated from the wreck.



## The Official Log of Rodgers' Flight Across America.

THE AEROPLANE is indebted to Mr. Edward Hunt, of Addlestone, for the following official log of Galbraith Perry Rodgers' sea-to-sea flight from the Atlantic to the Pacific. The actual flying time, arrival and departure time, and mishaps are noted:—

Sept. 17.—Left Sheepshead Bay, N.Y., 4.18 p.m.; arrived Middletown, N.Y., 6.3 p.m. 104 miles in 105 minutes.

Sept. 18.—Wrecked; fell 45 feet and wrecked machine completely.

Sept. 21.—Left Middletown, N.Y., 2.33 p.m.; arrived Hancock, N.Y., 4.3 p.m. 96 miles in 78 minutes. Wrecked skids.

Sept. 22.—Left Hancock, N.Y., 11.30 a.m.; arrived Elmira, N.Y., 5.30 p.m. 215 miles in 246 minutes.

Rodgers lost route and went to Scranton, 104 miles out of his way. Made stops at Great Bend, Binghamton.

Sept. 23.—Left Elmira, N.Y., 2.10 p.m.; arrived Canisteo, N.Y., 3.27 p.m. 149 miles in 107 minutes.

Smashed up skids and left wing in landing. Four magneto plugs came out and he held them in for twelve miles, flying with one hand. *Vol planed* two miles, and came down from 2,600 feet.

Sept. 24.—Left Canisteo, N.Y., 10.24 a.m.; arrived Red House, N.Y., 2.15 p.m. 89 miles in 145 minutes.

Came down on Indian reservation because magneto plug was loose and was afraid of an accident in air. Made three attempts to leave ground, at last going through two wire fences and completely wrecking machine. This was second time it was rebuilt. Towed back to Salamanca, N.Y., and three days spent in rebuilding.

Sept. 28.—Left Salamanca, N.Y., 9.35 a.m.; arrived Kent, O., 5.30 p.m. 203 miles in 210 minutes.

Sept. 29.—Kent, O., windbound.

Sept. 30.—Left Kent, O., 8.31 a.m.; arrived Rivare, O., 4.59 p.m. 204 miles in 258 minutes.

Oct. 1.—Left Rivare, O., 8.55 a.m.; arrived Huntington, Ind., 4.35 p.m. 80 miles in 188 minutes.

Saw a thunderstorm approaching and in attempt to skirt it went south to Portland, Ind. Caught between two thunderstorms, and before they were over passed third storm about 600 feet below him. Impossible to figure exact mileage this day.

Oct. 2.—Wrecked at Huntington, Ind. Attempted to get up in heavy wind. Spectators crowded on field, and in choosing between killing himself or dozen persons aviator wrecked biplane. Combination of Middletown and Red House, N.Y., wrecks.

Oct. 5.—Left Huntington, Ind., 11.30 a.m.; arrived Hammond, Ind., 6.10 p.m. 122 miles in 137 minutes.

Oct. 6.—Windbound at Hammond, Ind.

Oct. 8.—Left Hammond, Ind., 11.31 a.m.; arrived Chicago, Ill., 11.59 a.m. 22 miles in 28 minutes.

Oct. 8.—Left Chicago, Ill., 4.3 p.m.; arrived Lockport, Ill., 5.15 p.m. 38 miles in 72 minutes.

Mistook directions and flew over Lake Michigan to South Chicago. Then got lost trying to find special Vin Fiz train on the C. and A.R.R. tracks.

Oct. 9.—Left Lockport, Ill., 8.25 a.m.; arrived Springfield, Ill., 5.20 p.m. 181 miles in 299 minutes.

Oct. 10.—Left Springfield, Ill., 8.37 a.m.; arrived Marshall, Mo., 4.35 p.m. 207 miles in 309 minutes.

Oct. 11.—Left Marshall, Mo., 8.24 a.m.; arrived Kansas City, 11.25 a.m. 84 miles in 120 minutes.

Oct. 12-13.—Kansas City, stormbound two days

Oct. 14.—Left Kansas City, 11.55 a.m.; arrived Vinita, Okla., 6.30 p.m. 190 miles in 271 minutes.

Oct. 15.—Vinita, windbound.

Oct. 16.—Left Vinita, Okla., 7.42 a.m.; arrived McAlester, Okla., 2.30 p.m. 127 miles in 159 minutes.

Leaking oil tank and cracked cylinder kept Rodgers from continuing.

Oct. 17.—Left McAlester, Okla., 7.25 a.m.; arrived Fort Worth, Tex., 4.15 p.m. 265 miles in 283 minutes.

Lost flying to Bonita, and from that point flew over Santa Fé tracks to Fort Worth, two girls turning propellers for him.

Oct. 18.—Left Fort Worth, Tex., 12.5 p.m.; arrived Dallas, Tex., 12.42 p.m. 30 miles in 37 minutes.

Oct. 19.—Left Dallas, Texas, 1.55 p.m.; arrived Waco, Texas, 4.7 p.m. 100 miles in 127 minutes.

Oct. 20.—Left Waco, Texas, 11.18 a.m.; arrived at Kyle, Texas, 4.1 p.m. 120 miles in 143 minutes.

Nearly met death while in air at 3,500 feet. Crystallised piston and intake valves nearly made wreck.

Aviator shut off engine, *vol-planed* two miles, and made perfect landing in only pasture within forty miles.

Oct. 21.—Windbound at Kyle.

Oct. 22.—Left Kyle, Texas, 10.50 a.m.; arrived San Antonio, Texas, 12.40 p.m. 49 miles in 50 minutes.

Oct. 23.—San Antonio, Texas, held for engine repairs.

Oct. 24.—Left San Antonio, Texas, 12.30 p.m.; arrived Spofford, Texas, 6.5 p.m. 133 miles in 134 minutes.

Oct. 25.—Spofford, Texas, wrecked attempting to get off the ground.

Oct. 26.—Left Spofford, Texas, 1.3 p.m.; arrived Sanderson, Texas, 5.28 p.m. 174 miles in 140 minutes.

Oct. 27.—Sanderson, Texas, windbound.

Oct. 28.—Left Sanderson, Texas, 11.41 a.m.; arrived at Sierra Blanco, Texas, 5.42 p.m. 231 miles in 229 minutes.

Went into fence at Sanderson, smashing skids in attempting to start. Repairs made in 2½ hours.

Oct. 29.—Left Sierra Blanco, Texas, 9.15 a.m.; arrived El Paso, Texas, 4.11 p.m. 93 miles in 143 minutes.

Came down two miles west of old post at Fort Hancock. Pump connection sheared off, freezing motor. Rodgers fell five feet, fall being broken by mesquite, otherwise entire plane would have been smashed. As it was, skids were destroyed.

Oct. 30.—El Paso, Texas, laid up for engine repairs.

Oct. 31.—Left El Paso, Texas, 9.50 a.m.; arrived Wilcox, Arizona, 4.35 p.m. 222 miles in 243 minutes.

Came down at Deming, N.M., with broken magneto spring. At Lordsburg audience of circus left big tent and watched him an hour as he examined propeller chains; and decided that, though eleven of the rollers were missing, he would not stop to make necessary repairs.

Nov. 1.—Left Wilcox, Arizona, 11.5 a.m.; arrived Maricopa, Arizona, 5 p.m. 180 miles in 236 minutes.

Stopped at Tucson at 12.52 p.m., eating at 2.51 p.m. to greet Robert G. Fowler, other transcontinental flyer, who had smashed up day previous trying to get off. Fowler watched Rodgers' approach through telescope in U. of A. observatory, and was first to offer good wishes. This is first meeting of ocean-to-ocean cross-country aviators in world.

Nov. 2.—Left Maricopa, Arizona, 9.47 a.m.; arrived at Stoval, Arizona, 2.8 p.m. 167 miles in 163 minutes.

Made side trip to Phoenix from Maricopa. Special train of Vin Fiz camp arrived at Stoval two hours later. He complained that he would have made 150 miles more if gasoline and oil had been at hand. Camp spent night on desert, there was no gas on train, and Chef Davis entered section house and cooked dinner and breakfast, otherwise starvation would have set in.

Nov. 3.—Left Stoval, Arizona, 7.30 a.m.; arrived Imperial Junction, California, 9.45 a.m. 65 miles in 70 minutes.

Four miles beyond Imperial Junction, and over Salton sea, at 4,000 feet, No. 1 cylinder blew out, wrecking motor, shaft case and shaft, also magneto. Rodgers spiraled and *vol planed* down six miles, making perfect landing in rough desert opposite depot.

Nov. 4.—Left Imperial Junction, California, 10.45 a.m.; arrived Banning, California, 1.8 p.m. 99 miles in 143 minutes.

Flew for six miles through rock San Geronia Pass wind, but on one corner lever with his knee, when a connecting bar broke and it was necessary to hold it with his right hand to keep it from smashing the engine. Radiator sprung a leak and magneto plugs loosened, but descended safely into ploughed field after sensational 2,000-foot dive.

Nov. 5.—Left Banning, California, 12.3 p.m.; arrived Pasadena, California, 4.8 p.m. 79 miles in 113 minutes.

Stops made at Beaumont, where broken gasoline connection was soldered, and at Pomona, which time is deducted. Rodgers made beautiful landing without any damage in Tournament Park before immense crowd.

Total mileage of trip, 4,231 miles. Total actual flying time, 4,924 minutes. Number of days, 49. Days in the air, 24. Days kept down by weather or mishaps, 25.

### Helen in Trouble.

While trick flying over the Mediterranean, near Montpellier, Helen's Nieuport was completely upset by a powerful gust, and he came down on the water. In the words of *L'Auto*: "Aviator undamaged, perhaps a trifle imprudent."

**World's Records by Grahame-White.**

While in America Mr. Claude Grahame-White made the following records, which are now being considered by the International Federation. Flying his Nieuport, he climbed to 3,500 ft. in 8 mins. 55 secs. with a passenger, at Nassau Boulevard, and to 3,500 ft. in 5 mins. 21 secs. alone on the machine at Boston. The machine was the 70 h.p. Nieuport with which he won so many prize in the States.

**Claude Grahame-White and Co., Ltd.**

In order that there may be no misunderstanding about the matter, Mr. Claude Grahame-White has given THE AEROPLANE authority to explain that Claude Grahame-White and Co., Ltd., late of 1, Albemarle Street, is in voluntary liquidation simply to avoid any confusion with the Grahame-White Aviation Company, Ltd., of Hendon, who are the proprietors of the London Aerodrome. The creditors of the former company, which dealt in motor-cars and their belongings, are being paid in full, and the latter company, which deals solely in aeroplanes and that which appertains to them, is entirely a separate concern. Will readers of THE AEROPLANE please take this information as authority to correct any misconceptions they may hear on the subject?

**Mr. Loraine's Suggestions for Cyrano.**

Next week the revived production of *Man and Superman* reaches its hundredth production at the Criterion. Mr. Robert Loraine has appeared in the play nearly a thousand times.

Mr. Loraine says: "The piece is going as strong as ever, and I cannot yet name any date for my next production." Concerning his future plans Mr. Loraine is full of ideas. "I hope to appear one day as Cyrano de Bergerac," he says. "But the translation of Rostand's alexandrines into English appears to me a most difficult task. So far I have not read a version that satisfies me completely. To be perfect the translation should be apportioned to different people, giving, for example, the first act to Mr. Bernard Shaw, the second to Mr. Maugham, the third—the love scene—to Mr. W. B. Yeats, the fourth—the episode of the Siege of Arras—to Mr. Kipling, and the last act—the death of Cyrano in the convent—to Mr. Barrie."

Mr. Loraine also hopes to appear in *Troilus and Cressida*, *Timon of Athens*, and, above all, *King Lear*. In spite of all this work he has by no means given up his interest in aviation, and hopes to be flying again next spring.

**Mr. Ferguson's Hangar.**

Mr. Harry Ferguson continues to have bad luck with his machines. As was explained in THE AEROPLANE, the only hangar the machine possessed was a piece of tarpaulin for the engine, and, while Mr. Ferguson was in London at the Motor Show, a gale blew the tail clean off the machine, in spite of the fact that the front of the machine was securely anchored. However, it is now being repaired, so Mr. Ferguson will exhibit it at an exhibition of Irish-manufactured goods in Dublin next month, and he hopes to be flying again before very long.

**The "Daily News" Year Book.**

For a publication issuing, as does the above, from a non-technical house, the general accuracy of the "Aviation" section is extraordinarily good. The matter, of course, is compressed *qua minime*, but the publishers have found room for a fairly good list of the year's records, and for an article

**Mr. E. V. "Smith" and the "Big Bat" Blériot at Brooklands.**

on Military Aviation, drawing attention to the disgraceful neglect of aviation by the British War Office. The matter has been brought up to date to the end of October, 1911, and is quite accurate, so that it can be referred to without fear of error. Mr. T. Beauguard, who is responsible for this section of the Year Book, is to be highly complimented for his good work.

**Air Scouting Course on T.S. "Mercury."**

On Monday was inaugurated the special course of instruction in aeronautics for the boys of the training ship *Mercury*, who appear very keen to study the new science, and fully aware of the value which a sound aeronautical training will be to future sailors.

Mr. Blin Desbordes, who gave the inaugural address, dealt especially with the different ways in which the new means of locomotion is likely to affect the Navy.

**Concerning Captain Clayton.**

With reference to the photograph of Captain Clayton, of Mansfield, which appeared in THE AEROPLANE recently, owing to a misunderstanding his machine was called a "Blériot-pattern machine." However, the one shown in the photograph was a genuine Blériot bought by Captain Clayton from the Blériot Company and brought back by him from their school at Pau. He has, however, a biplane of his own design and construction, and it is that machine which is fitted with an Alvacon engine.

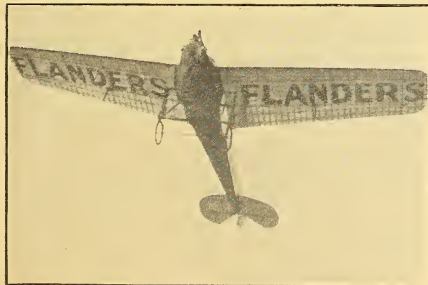
**Manchester Aero Club.**

At committee meeting held on 22nd inst. it was resolved that a dinner be held in February, and that a public lecture be arranged for next March. It was resolved that a sum not exceeding two guineas might be given for the best paper delivered during the season.

The following resolution with regard to the proposed military aeroplane competition was passed, and it was resolved that copy of same should be forwarded to the War Office.

"That the Manchester Aero Club considered that the action of the War Office in throwing open the military aeroplane competition to foreign competitors is not conducive to the best interests either of the country or of the British aeroplane industry."

F. AKENHEAD (Hon. Sec.).

**The Flanders Monoplane, photographed from below by Mr. W. O. Manning.**



## Half a Day at Bristol.

There are two good reasons for visiting Bristol—one is to see the Bristol and Colonial Company's works, the other is because the Bristol and West of England Aero Club happens to be doing something out of the ordinary. I had both reasons. I knew the Bristol Company had something worth seeing, and I was bidden to the club's annual dinner as well. Hence this.

Imprimis, arriving about 3 p.m., I was met by that sportsman known to those who fly as *le sympathique aviateur Zuma*, otherwise Mr. Herbert Thomas, until recently the youngest of our certificated pilots, and now the very thorough and conscientious comptroller of stores, or the like, at the Bristol works, who conducted me, in his own characteristic manner, and Mr. Stanley White's fast Charron, to Filton, where much work is in progress. Without giving away state secrets, one may say that there is much movement toward in the Bristol Company, and that, as soon as the weather settles somewhat, a whole fleet of Bristol monoplanes are likely to prove that the British constructor is able to do more than hold his own against the world.

These new monoplanes are really beautiful pieces of work, and the way they are put together ought to instil confidence into the most hypercritical pilot. There is nothing like carrying the war into the enemy's camp, and, somewhat on that principle, the Bristol people are going to defy criticism by the simple process of exhibiting their latest machines at the Paris Show next month, so that those who still disbelieve in British construction will only have to walk across the gangway to see the error of their ways. The latest machines will be seen in Paris for the first time in public, and I particularly ask those who visit the show to compare the machines with anything else there for workmanship, material, and design, in general and in detail.

Another interesting machine, which, however, will not be seen in Paris, is the new biplane which Mr. Gordon England has designed. It is now taking coherent shape rapidly, and will, I feel sure, produce a new breed of Bristol biplanes, which will add considerably to the good name acquired by the older type.

The works, as a whole, have altered very much since I was last there in February, and a magnificent system has been instituted by Mr. Raper, the works manager, which must save quite a lot of wastage, both of time and material. Since February, also, Filton House, an old mansion adjoining the works, has been taken over and turned into offices, where Mr. Stanley White, the managing director, and his able staff officers, Messrs. Sydney Smith (the general manager), H. White Smith (the secretary), and Farnall Thurston (the sales manager), are in immediate touch with the works. Altogether, everything is now arranged to turn out the best possible machines with the greatest efficiency, both administrative and productive.

### The B. and W. of E. Club Dinner.

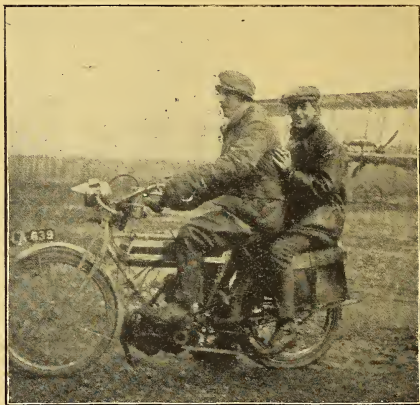
One could spend days in those works with joy, so, as a result, I had a wild rush to get into the city of Bristol and out to the Clifton Downs Hotel to the club's gathering, where, with Sir George White, the president of the club, in the chair, a hundred or so members were assembled.

As is usual with the Bristol Club gatherings, everything was excellently done, and the Clifton Downs Hotel is to be congratulated on its chef. The after-dinner speeches were commendably short and to the point. Alderman C. J. Lowe, proposing the Imperial Forces, said we must move with the times, and that the club, and Bristol as a whole, had the knowledge that in helping aviation they were making the country's defences more sure.

Major Weston-Stevens, in reply, made an appeal on behalf of the Territorials, and said that young men could have a good time and be useful by joining.

The High Sheriff, proposing "The Club," said that Bristol should be proud of its position in aviation. One-third of all the British pilots had been trained in the Bristol schools, which was not surprising to those who knew Sir George White's thoroughness, and remarked how valuable these pilots would have been if the recent "crisis" had ended in war. He was glad the University of Bristol was to undertake technical classes.

Mr. Samuel White, J.P., replying, spoke of the utility of aviation, as viewed by his experience in the Argentine, where, on the big cattle ranches, one could fly 500 miles over flat country. Already in Australia interest was being taken, and Macdonald, the chief pilot of the Australian mission taken out



A Pilot as a Passenger:—C. P. Pizey as Passenger with Captain Gordon.

by Mr. Sydney Smith, had trained one Australian, Mr. Hart, so well that he had flown 45 miles across country. He recalled that the machine taken out had made seventy-five flights without a breakage. Macdonald was a member of the club, and another member, Dr. Dacre's son, had taken his brevet the previous day. He expressed the club's obligation to Mr. Alan Jenkins for his good work, and said the club's existence was more than justified by the excellent arrangements it had made for the Circuit of Britain. He noted that the strides made by aviation were due to private enterprise, and not to official encouragement.

Mr. Hugh Doggett, who proposed the president's health, did so in most felicitous terms, saying that when Sir George put his hand to anything he did it in no half-hearted way, as witness the Bristol aeroplanes and the Bristol Club.

Sir George White, in replying, disclaimed any credit for the club, saying that all the initiative came from Mr. Jenkins, and that the club's work was most encouraging. He was pleased to see how deep was the interest shown by the members of the club in the Bristol industry which was established to supply the world with aeroplanes, and with their expressions from time to time as it became evident that Bristol biplanes were securing such a firm hold in various parts of the world. They would, therefore, be additionally interested in knowing that the Bristol monoplane, as the result of many months of thought and the application of some of the best inventive genius, had fulfilled the strictest tests which had been laid down by certain Continental military authorities. These particular tests, so far as he knew, had up to the present only been fulfilled by one other make of machine on the Continent.

It seemed strange to open one's newspaper and find that there is an impression amongst some people in this country that it may be necessary to go abroad to secure aeroplanes of any description, either for national or private purposes, but this impression would be very short-lived. The authorities in this country now seriously realised that aeroplanes in large numbers must form part of the equipment of our forces. Hitherto they had not looked upon aeroplanes as of such a pressing necessity as they had actually proved to be in recent military operations, but, as the question was now to be dealt with earnestly, and England must be in advance of any other Power, and, therefore, must have hundreds of aeroplanes, he would never believe that either the War Office or the Admiralty would be found wanting in the encouragement of British industry.

Another interesting point to them, as Bristolians, was that a very much larger number of England's certificated aviators had been trained upon the Bristol machine than upon any other, whilst of the Army and Navy officers who have qualified to the present, more have taken their brevet on Bristol than

on all the other machines put together, so they would see that Bristol was keeping well to the fore in every branch of aviation, and it was not surprising, therefore, that they had a highly flourishing and prosperous club, the most important of any in the provinces.

The developments in aviation had been very striking during the past twelve months, but would be more so in the coming year, and he was sure that, as members of the club, they all felt a satisfaction in being within the inner circle of those who are pioneering this marvellous science, and, as their president, he felt it an honour to be permitted to assist them in making the club a great success.

Mr. Alan Jenkins, the secretary of the club, replying to Mr. A. E. Catford's very neat speech in his honour, urged enthusiastic optimism on the members. He wanted the club to be bigger. Its future success was ensured, but he wanted its future to be really great.

Mr. F. A. Thompson gave the toast of "The Visitors" briefly and beautifully, and through some unaccountable piece of malignity I was put up to reply, doing so on the established principle of stand up, speak up, and shut up, and I wish to register my protest against Mr. Jenkins, because the job ought to have been given to the real guests of the evening (after the High Sheriff), those excellent aviators, James Valentine and Henry Petre (otherwise known as the Monk). And,

#### The Deputation to the War Office.

A meeting of the committee elected on Tuesday of last week to form a deputation to the Under Secretary of State for War was held at the Royal Aero Club on Friday last. Sir Chas. D. Rose, M.P., presided, and said that he saw no objection to a big deputation. It certainly seems likely that a numerous deputation would show the officials better than a small one that many firms are interested in the subject. Certain members of the committee were selected to act as mouthpieces of the deputation when introduced to Colonel Seely—Messrs. Roger Wallace and J. H. Ledebor to speak on the general position, Captain H. F. Wood, and Messrs. Howard Wright, Howard Flanders, and H. G. Burford to put the case of the aeroplane manufacturers, and Mr. Fred May to demonstrate the position of British engine makers.

It is said that opinions were divided on several subjects, the chief division being between representatives of firms who had done original work and had produced an effective machine as a result, and those of firms who had spent vast sums on trying to copy other people's designs, with varying success. Some of those present presumably thought that until a firm had produced an aeroplane which was, in its class, a success, that firm should not be entitled to a voice in the matter, and should not be reckoned as practical manufacturers of aeroplanes, on the sound grounds that one might copy a machine fairly accurately in outside design and yet be unable to make it fly, owing to lack of practical knowledge of details. However, no doubt the deputation will have some good effect.

#### To Show or Not to Show.

It is highly probable that there will be no British Aero Show next spring. It appears that, having lost so much money over the previous shows, the Society of Motor Manufacturers and Traders, or, at any rate, certain members of its ruling council, do not wish to risk another loss next year. It is also argued that, if big Government orders are then

anyhow, Valentine had to make a speech, because when last in Bristol, in the course of the Circuit of Britain, he had received, from a very small feminine admirer, a black china cat as a mascot, and had left it in the keeping of the club. The club, per Mr. Thompson, now demanded that it should be presented to them, which he did with due regret. Valentine is certainly a "hot airman," in one sense, but he loves not the making of speeches any more than I do, and the ordeal terrifies him more than would the prospect of a Circuit of Britain on an engine-behind, lifting-tail biplane. However, he did it very prettily when he had to, and thanked Sir George White for the prize he had given for the first Britisher to reach Bristol, which Valentine won.

Thereafter, we had excellent songs and recitations, and, at a late hour, returned to our hotel in the centre of Bristol, ten of us all inside one Charron taxi, because the driver refused to turn himself into a kind of armoured train, with a Hotchkiss on the bonnet, even with Prier and Lang on the box to keep him in order, and seven of us inside to balance the weight in front. He said that police regulations did not allow passengers on the box. The *vol plané* down Park Street hill, with eleven on board, was great, and a marvellous testimony to those never-sufficiently-to-be-admired Charron springs and brakes, let alone the Kempshall tyres. Taking it all round, it was a busy half-day. C. G. G.

in hand, the manufacturers will be too busy to show; whereas, if the orders are not forthcoming, no one will be able to afford to show, at any rate at the big price demanded for space at former shows.

The question is certainly open to argument. The S.M.M. and T. has quite large sums in hand from its former motor-car shows, and it might be thought that it could face a loss of a couple of thousand pounds simply for the purpose of educating the British public and encouraging the new industry, even if it had to give space away. Further, it has often been said that the advertising of previous aero shows has been so ineffective that the public were not tempted to come to them. Certainly, last year's ridiculous poster was not much of a draw, and the lay press did not appear to have been worked up to take such an interest in the show as they do in the car show.

#### A Military Discussion.

Everyone who is interested in military aviation should make a point of obtaining a ticket for the meeting of the Aeronautical Society of Great Britain, which will be held in the theatre of the Royal United Service Institution, Whitehall, S.W., on Wednesday next, December 6th, at 8.30 p.m. A discussion is to be held on "The Military Aeroplane," and Colonel J. E. Capper, C.B., R.E., will open the debate. The points to be discussed are: (1) Speed; (2) Radius of action; (3) Height attainable; (4) Rate of climbing; (5) Number of persons to be carried; (6) Equipment for obtaining and transmitting information; (7) General requirements for tactical reconnaissance. A number of military men of considerable eminence have signified their intention of being present, and, in view of the attention which is now being drawn to military aviation in this country, the meeting may be said, without exaggeration, to be of national importance. Those wishing to obtain admission should apply for tickets to Mr. T. O'B. Hubbard, Secretary of the Aeronautical Society, 64 Victoria Street, Westminster.



Delacour on the 100 H.P. Clerget Deperdussin at Reims. In the centre of the picture, in the soft hat, is Mr. Lawrence Santoni, of the British Deperdussin Company.



## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

### British Manufacturers.

Sir,—I trust you will allow a manufacturer space in which to reply to a recent leader in the *Daily News* on "Protection and Aeroplanes." This leader is, I am afraid, calculated to do great, perhaps irreparable, harm to that body of men who have endeavoured to create an aeroplane industry in this country. Many of these men have devoted themselves for a long time to, and incurred a large expenditure of money in this aeronautical work, purely from reasons of patriotism. Such men must necessarily include both schools of political thought, those who fancy they see advantages in Free Trade and those who fancy they see advantages in Protection.

It is not fair, therefore, that they should be dragged into the general discussion of Protection versus Free Trade.

There is a movement—a very strong movement—to secure some support from the Government in aid of aeronautical work in this country. Is it not right and just that such a movement should be considered calmly as a piece of national business, and apart from a subject which raises political passion?

I should like now to discuss in some detail the statements and arguments put forward in that leader, not with any political object, but as a matter of grave national concern.

In the last sentence it is written: "Leave the market free for the best machine to win, and it will not be long before the British aeroplane will compare favourably with the best produced by any other country." The meaning of this sentence is that this country possesses the men who are capable of designing and constructing aeronautical machines as good as can be produced by any other nation. That is a fundamental fact to be gripped and retained in the mind.

Earlier it is said: "The War Office wishes to discover the best pattern of military aeroplane, and, upon its choosing, the fortunes of a future war, and with them the fate of the country, may depend." Then, further on, it appears that if the Government bought anything but the best, "It would be very like treason to the State." This part of the case is put in words which could scarcely be made stronger, and the sentences merit consideration.

We have very recently passed beneath the shadow of an impending war. What would have been the position of the Government had war actually broken out? This country would have been absolutely unprepared with the aeronautical machines on which the future of the country may depend. Is it not here that the real "treason" occurs? There have been in this country "a handful of men" engaged in the arduous task of the conquest of the air. These men, so far as the State is concerned, have been absolutely and utterly without aid or encouragement.

According to the plain meaning of the last sentence of the article, we have the power of winning complete success in this very difficult field of endeavour. It seems, therefore, clear that, had the Government foreseen that it would be "treason" to be without efficient aeroplanes, and had it aided to the best of its ability those who were willing to carry on the arduous work, we should to-day have been in a position of preparedness as compared with the rest of the world.

Money is a necessary corollary to brains in any attempt to produce an aeronautical machine. I think, too, one may admit that, in its present stage, the flying machine is scarcely more of a commercial proposition than the submarine. As is shown by the words of the article, the flying machine is an instrument of war which must, beyond all question, be possessed by this country. It follows from these statements that the aeronautical industry must look for its support to the Government, and it is beyond question that such support has been withheld.

Now, let us consider the position in this country to-day. The *Daily News* states: "It is notorious that at present British aeroplanes are inferior to French." This is a statement which cannot possibly be upheld. Let me name the Short, the Cody, the Valkyrie, the Flanders, the Blackburn, the Bristol, and the American type Wright, as constructed and used in this country by Mr. Alec Ogilvie. Any one of these

machines is first class, and a machine of which this country may well be proud. And I may point out that on the Cody and on Mr. Ogilvie's Wright machine, English engines—the Green and the N.E.C.—are invariably used, with absolutely satisfactory results.

Leaving politics entirely on one side, what would have been the result if, during the past two years, the Government of this country had spent money in purchasing machines and engines from the men and firms responsible for those named?

The answer must unquestionably be, "Excellent, well worth the expenditure," and we should to-day have been in possession of an aeroplane industry capable of equipping us with flying machines as admirable as those possessed to-day by France. And, so far as this part of our preparation for war is concerned, we could have felt satisfied, and there could have been no question of talk of "treason" on the part of anyone concerned.

I trust that what I have written has proved that in this country we have the materials and the brains, and that all we have lacked is the necessary financial support.

If one carefully considers the progress of the aeronautical industry in France, one must admit that it has been consistently supported by the State, with the result that those men who possessed the necessary qualities have achieved great success.

It certainly seems to be a cruel, callous, and unbusinesslike proposal to pit the unsupported Britisher against the State-aided Frenchman, because success in such a contest must be largely influenced by the financial strength, and the strength of the organisation of the competitors. You may argue that to-day that is the only method open to the Government of this country. But if so, and if there is any blame attaching to anyone, it must certainly be to the Government, who, by lack of foresight and imagination, or by inability to find the necessary money, have deprived this country of a necessary weapon, and have been guilty of "treason" to the best interests of the State.

But this refers to the past, and cannot be altered. We are concerned now with the future. And I think it is absolutely vital that it should be clearly understood that it is at least as important that the Government should think of the improvements to come in the future as of obtaining possession of the best machine of the moment. It is certain that the machine of to-day will be completely outclassed in twelve months' time.

Would it not, therefore, be a wise, patriotic, and statesman-like act to adopt some scheme which makes it certain that Government support shall be given to the best of those English inventors and constructors who, working entirely without Government support, and, therefore, struggling against a tremendous handicap, have nevertheless endowed this country with machines of great value? I think I should add that in all competitions there is an element of risk, and that even if the best machine in the world to-day is English it might fall in an open competition purely through luck. And I think, from a purely patriotic point of view, we want to make quite sure that sufficient (mark, I do not say all, or even most) money is spent amongst our own constructors to ensure the continued development of the machines in this country.

Again, in such a matter as this it is surely important that the net should be widely spread. There are many men from whom some portion of the necessary development may come; the scheme adopted should, therefore, be such as will ensure a reasonably wide distribution of the money.

I have written, I am afraid, at great length, but my excuse must be that it is a subject of great national importance. I certainly feel deeply about it, and I have some knowledge of the subject. If I have shown that this is a matter apart from the problem of Free Trade and Protection, and one which should be taken very seriously by the nation, I shall be well satisfied. I am absolutely certain that, if this nation spends some of its money on its own constructors, it will be well repaid, and need not fear that these men will relax their efforts because they are working for the nation, and not merely to meet foreign competition.

The British Navy is not half bad; is it? And yet it is the product of British engineers, who do not have to face foreign commercial competition. And the *Daily News* itself manages to produce a good leading article, though it is not kicked into it by the competition of French and German journalists. Play fair!

London, W.

BRITISH MANUFACTURER.

### Aerial Scouting.

Sir,—Because the British War Office still continues its stately progress along the primrose path of an ancient prejudice, it by no means follows that the public pronouncements of

one of its officials should necessarily be lacking in either intelligence or common sense. Wisdom is to be found in the strangest of places. One cannot help, therefore, feeling that in your last issue you were needlessly unkind to an officer whose only claim to mediocrity is that he has a double-barrelled name.

His first statement, which you bracket (a), as to the foresight of the War Office, is the usual formula with any military officer who begins a speech on Army affairs. One has one's own view as to its truth.

His second statement is of much greater importance. He is only repeating an opinion held widely amongst strategists of considerable ability, i.e., that nothing revolutionises war, the inherent principles remain the same however the conditions may alter. The tactics of Crecy and Poitiers still regulate the battle movements of modern armies. The field of contest is greater and the weapons of greater precision. That is all. The destruction is still about the same. The aeroplane will simply make it more difficult to conceal a movement, will make surprise attacks less likely, and more and more will war resemble a game of chess, where all the moves are visible to both combatants.

Strategy, as a whole, will be but slightly affected. You will remember Bloch's arguments as to the impossibility of warfare between civilised nations in the twentieth century owing to the fearful destruction following on the use of the terrible weapons of to-day. And yet within a few months of the publication of his books came the South African War, and, later, the Russo-Japanese. In neither were the casualties above the average of previous contests.

The point (d) as to aeroplanes engaging each other, the analogy of the use of cavalry patrols, is probably the correct view. One's books tell one that on no account may patrols come into contact. But in practice they do, nevertheless. Probably aerial scouts would not seek an aerial duel, though circumstances might force it on them. You are probably both in agreement, though looking at the matter from different points of view.

Colonel Hunter-Weston's most important argument is against the use of civilian aviators. The greater range of vision open to the aerial scout makes it possible for him to read the meaning of a movement instantly, and it is possible for him to forecast the probable position of various branches of the opposing forces for some hours to come. But he requires the most perfect training for this, training extending over years, making his knowledge almost instinctive. He must be able at sight to distinguish from a height of two thousand feet the various component parts of a modern army. He must not as a certain French scout did last year confuse the effect with the cause, and take a line of ambulances for an ammunition column.

Piccadilly.

W. E. DE B. WHITTAKER.

### Compasses.

SIR,—I have been much interested with the correspondence in your paper *re* Compasses, and, being a seaman, it has amused me very much picturing to myself an aviator obtaining the true bearing of the sun with the aid of Burwood's tables, nautical almanac, watch, and pelorus, and at the same time looking after his machine. And if he did get a bearing, he would very probably want another one in half an hour.

To solve the difficulty, would it not be possible to fit a gyroscopic compass to the aeroplane? No doubt you know that if a gyroscope is run at a high rate of speed, the axle takes up a position parallel to the axis of the earth, and therefore lays true North and South, the upper end always pointing to the nearest pole. It has the advantage of not being affected in any way by variation or deviation. I should think it would be possible to run a dynamo (a small one, of course) with the engine of the aeroplane, by an endless band, which dynamo would work the gyroscope. No doubt it would be a costly affair, but a very useful one in a cross-country or a Continental flight.

Bournemouth.

T. PHILPOTS.

SIR,—I quite appreciated that Mr. J. D. North's suggested method was only given for the purpose of finding a rough direction, and, under the circumstances, possibly it was the best one. My remarks were made to show how very approximate the results would be.

As a matter of fact, the description of what would really have to be done to obtain the sun's true bearing was given with the idea of imparting some humour into what might otherwise be considered a dry subject. Can anyone who

knows our average flyer picture his expression if asked to find an azimuth, and set a course by means of the pelorus and the tables I mentioned?

It is unfortunate that I seem to have amused myself alone, as your correspondent, Mr. H. M. Luggate, really seems to think that I was seriously giving directions on how to use a pelorus, and that I proposed each aviator should be supplied with the necessary apparatus and outfit. I must try to be more serious in future. I have spent the last six months explaining to aviators (and anyone else who would listen to me) the folly of fitting a compass to an aeroplane without having the machine properly "swung" and the compass adjusted for deviation, therefore I am the last person in the world to seriously suggest borrowing a compass and fitting it on to a machine on the spur of the moment, knowing from practical experience in compass adjusting on aeroplanes that the deviation in some cases amounts to over 80 degrees. When properly adjusted, these errors can generally be reduced to a negligible quantity, or, anyhow, to an amount which can be tabulated or shown in the form of a curve and easily applied to the course on which it is desired to fly.

I agree with Mr. Luggate that true bearings are really what are required, but all courses at sea, where compasses were used long before aeroplanes were invented, are given correct magnetic, so it is better to keep to that method until aeroplanes can be fitted with gyro compasses, which, of course, point to practically the true North.

Mr. Luggate complains about my being hazy when speaking in a light manner of the sun's bearing. It is very wrong, no doubt, but he is rather worse than hazy when he lays it down, as a fact, that the magnetic compass needle points 15 deg. 40 min. W. of true North. This difference (variation) alters from place to place; at Valencia it is about 21 deg. W., at Lands End 18 deg. W., at Dungeness 14½ deg. W., at the extreme end of Iceland it is 36½ deg. W., whilst at other places on the earth's surface it may be 0 deg., or the variation may even be Easterly.

Returning to Mr. North's reference to side wind difficulty, this matter is not nearly so difficult as it seems, and I have repeatedly proved by practical flights that a very simple way of setting and checking the course exists, provided the earth is in sight from time to time. This letter is already too long, so I will leave the matter until another time; but if Mr. North has a method of getting over the difficulty when out of sight of land, I am sure we shall all be only too glad to hear of it.

Kensington.

ERIC H. CLIFT.

### Orientation of Churches.

SIR,—In THE AEROPLANE of the 9th inst., Mr. Manning, commenting on means whereby an aviator can obtain the approximate position of the points of the compass, remarks that "the ordinary village church affords a very good guide, as it is invariably Orientated, the altar being at the east end."

This is by no means true of old churches, for in earlier times the Orientation of the chancel was often towards that part of the horizon where the sun rises on the morning of the patron saint's day.

Thus, in the Home Counties a church dedicated to St. John the Baptist might have its altar end facing N. 51 E., and one dedicated to St. Thomas S. 51 E. For the latitude of Yorkshire the aspect would be almost due N.E. and S.E. respectively.

London, S.W.

J. F. S.

### British Birds as Aviators.

SIR,—As a matter of interest I should like to refer to the undulating flight of small birds like the sparrow, mentioned by your contributor in his article, "British Birds as Aviators." The general theory on the subject is that the birds adopt this method of flight in order to attain a speed considerably in excess of their proper flying speed. They flap with great vigour on the downward side of their wave-like path, then close up their wings and are carried over the top of the next wave by the momentum obtained.

This type of flight is often seen when the bird is trying to get out of the way of a motor-car, or is called upon to hustle by a small boy, and it is no doubt an instance of the curved, phugoid path consequent upon excessive speed, though the analogy is not as easy to trace as may seem at first sight.

As far as gliding is concerned it is certainly a pastime which does not seem to appeal to the sparrow, but on the rare occa-



sions when he does indulge in a short *vol plané* I do not think he makes such a poor job of it as your contributor seems to infer.

Ingatue-mie.

HIBO W.

### Natural Stability.

Sir,—I thank you for your courtesy in printing my letter and also for the comments, which I think quite fair. I agree that the reasons against parachuting planes "may be inadequate." There are possibly reasons against opening an oyster shell before devouring the inhabitant. They also "may be inadequate." It is, as you say, "a matter of opinion."

With regard to the Deperdussin, Mr. Valentine showed considerable presence of mind in trying to steady himself by hanging on to the fuselage. But do I understand you to recommend this stabilising method in preference to my own? And anyway, I thought you were contending that modern machines did not need stabilising, either by the acrobatic evolutions of the aviator or by the simpler means advocated by myself.

I feel sure that, after due consideration, your readers will appreciate, as I do, your reasons for declining to fill the valuable pages of *THE AEROPLANE* with any more corrections of my "errors."

Please consider your challenge accepted, time and place to be named by you when convenient. Till then—*El Salam Maik*.

Maida Vale.

W. LE MAITRE.

### Aviation as a Profession.

Sir,—I am pleased to see that one of your correspondents has written to *THE AEROPLANE* re "Aviation as a Profession."

I have taken great interest in aviation this last two years, and I am never more happy than when reading the instructive articles in *THE AEROPLANE*.

Since your paper came out I have learnt a lot of the scientific side of aviation, and, without boasting, I am sure I could explain how an aeroplane is piloted, how to get up and come down, and take corners. I think constructors ought to give competitions to young men (whom they may want to pilot their machines) to see what knowledge they have of aeroplanes, and to give the ordinary lad a chance to become a pilot. I have never yet seen a real aeroplane, but I have a good idea, as I mentioned above.

I think the ordinary "man in the street," whom our aviators seem to want to interest, would take up aviation if he thought he could make anything out of it. As it is now one has to have at least £100 to get even a smell at it. The only way I can see is to get a job as mechanic; and even aviation mechanics do not seem to be able to get a job, according to the advertisements in aviation papers.

Your correspondent, Jeremiah Jenkins, says there is plenty of room for young men as pilots or makers of aeroplanes. I do not see that there is, especially if they have no money.

Even to get a smell at the practical side of aviation, I would be willing to give my services (what little use they may be) to any pilot aviator at week-ends in order to get in aviation. This does not apply only to me, but to other young men in the same position as myself.

At any rate, I shall still keep on learning all I can about aviation, as the knowledge I get now will not be wasted, even if I do not rise from my present position.

Manchester.

GEORGE HARRISON.

### Still More about Freak Models.

Sir,—I have been greatly interested in the remarks of some of your correspondents re "Freak Models," most of whom seem to take a great delight in attacking the "Mann monoplane."

Mr. Piffelflieger seems to have rather peculiar ideas on fuselage construction. I have never yet seen a successful flying model with only sufficient strength to resist the strain of the elastic motors. Most model makers usually prefer to give the frame a small margin of "unnecessary strength" in order that its life should not be restricted to a single flight.

"Power," as Mr. Piffelflieger is probably aware, is "rate of doing work," and may, therefore, be applied equally well to a petrol engine, elastic motor, or any other power plant.

In your issue of November 16th Mr. R. R. Drake says, in a very polite manner, that the Mann monoplane is greatly assisted by the wind in performing its half-mile. Is not Mr. Drake paying a tribute to the stability of the Mann monoplane

when he says it is flown in high winds in order to obtain long flights? However, assuming that the machine in question is capable of only 1,500 ft. in a calm, there still remains the fact that the model has put up a duration record of eighty-two seconds, which an inefficient model could not do with such comparatively small surface.

I am afraid I cannot agree with Mr. L. S. C. Roche when he classes slow duration models as "freaks." The majority of models may be divided into two distinct classes—those intended to fly long distances and those intended for duration. Each is efficient in its own respect, the chief feature of the latter being that it flies, or should fly, on a small power. I am quite aware of the fact that some model makers employ large propellers in order to obtain duration of flight, but the better way is to increase the machine's efficiency so that small propellers are sufficient to drive it. If this is done, the number of strands may be cut down, thus permitting an increase in the number of turns.

It may be of interest to Mr. Roche and others to know that I have designed a model on this principle which has flown its "quarter" and made a duration flight of sixty-eight seconds, the propellers being only 8 ins. diameter and 1½ in. wide blades. Palmer's Green. E. R. BROWN.

Sir,—Since Mr. Grimmer's reply to my letter upon the subject of freak models caused me so much amusement, I can well afford to ignore his insinuated doubt as to my veracity, regarding it as evidence only of very poor taste upon his part.

I note his remark that the propellers to be fitted upon the full-size Mann machine will be similar in design to those used on the model, also his information as to the dimensions of those used upon the model which is stated to have beaten record.

Concerning these, I am curious to know what Mr. Grimmer means when he writes that these 9 in. propellers have an "effective" pitch of 27 ins. Does he wish me to infer that these very rational propellers, which he compares favourably with those in use upon the Baby Wright machine, have an actual pitch of something in the neighbourhood of 34 ins., and, by reason of a 25 per cent. slip loss, are effective in their operation to the extent of 27 ins. per revolution, or would he have me believe that their actual pitch is 27 ins. and they possess 100 per cent. of efficiency?

If the former be the case I should dub them, not even freak propellers, but flappers; if the latter, then I should be almost tempted to make similar imputations to those he addressed to me. At all events, assuming their actual pitch to be 27 ins., and making the minimum reduction of 25 per cent. for slip, the extra 1 in. of diameter would only make a difference of sixty yards during their 1,000 revolutions, increasing the distance flown from 500 yards, as I first estimated, to 560 yards. This being so, the Mann monoplane is practically as far off the half-mile as ever.

Without doubt the wind is responsible for any extra distance flown by this model, and I challenge Mr. Grimmer to disprove it. If Mr. Grimmer is still unconvinced, let him attempt record with the same model under the conditions imposed by the Kite and Model Aeroplane Association, and then he will doubtless see the futility of his belief.

Regarding the forthcoming full-size machine, which is to be so similar in design to the Mann model, I have been taking Mr. Grimmer's statements and figures into account and have evolved a machine with a main plane 20 ft. by 5 ft. with a camber of 9 ins. It is driven by two propellers 9 ft. in diameter and 27 ft. in "effective" pitch.

Assuming that the ideal proportions which were arrived at by means of those "pages upon pages of algebraical calculations," mentioned by Mr. Grimmer in a recent letter, will be adhered to, I find that by reason of their "effectiveness" the propellers, revolving as in the model at 750 per minute, will whisk this machine along at a speed of 20,250 ft., nearly four miles per minute. Ye gods, what a projectile!

And now the query arises: Have Messrs. Mann and Grimmer hopelessly outclassed all our cleverest designers of fast and efficient full-size machines, or is the Mann model a freak?

Dealing with the last portion of Mr. Grimmer's letter, it may interest him to know that I have designed and constructed several models which are capable of easily beating any performance accomplished thus far by the Mann monoplane, and which will certainly be entered for the competitions to be held next season.

Walthamstow.

ROBT. R. DRAKE.

Sir,—Re "Piffelfieger" I am quite aware that on full-sized machines there is no fixed ratio between span and propeller diameter, but it is surely universally agreed that no individual screw should exceed in diameter half the span of the main plane, even this proportion being seldom or never reached in any present-day machine. This being so, the absurdity of "Piffelfieger's" remarks about 18-inch propellers is only too apparent. With reference to my query as to the ideal ratio between weight of frame and weight of rubber, "Piffelfieger" has evaded the giving of a definite answer. As regards a model flying the same distance with propellers of any diameter, I have experimented, and I still disagree. An extra inch more or less in the diameter of a "Mann" propeller means a gain or loss of several hundred feet. Again, if "Piffelfieger" is correct, what need is there to employ enormous 12-inch screws on machines with an 18-inch span, when, presumably, six, or even three-inch, screws would produce identically the same results? The number of "huge-propellered freaks" that one encounters at competitions would seem to imply that there is some advantage in the use of disproportionate screws.

"Piffelfieger" seems to be under the erroneous impression that the sole purpose of the fuselage is to resist the pull of the rubber (power). As a matter of fact, in the "Mann" monoplane the frame is made specially strong, not for the reason "Piffelfieger" assumes, but in order adequately to withstand the shock of landing. If a frame is designed solely for resisting the pull of the power, it will look rather silly if the machine makes an involuntary descent; in fact, the aeromodellist will probably require a new one! In the same way, I believe that the fuselage of a full-sized machine is not designed merely to resist the vibration of the motor, but also plays a more or less important part in the operation of landings. But, perhaps, like the "Mann" monoplane, these machines are not correctly designed! Despite the sneers of "Piffelfieger" at my associates, presumably the members of school aero clubs, it is a fact that the average schoolboy with practical experience has considerably sounder views on this subject than "Piffelfieger," whom one is finally amazed to hear is an advocate of "efficiency," as expounded by one whom he terms a "wronghead."

Re "Mancunian," who, in the first place, appears to be under the impression that the forthcoming full-sized "Mann" machine will be exactly proportionate to the model, I am very pleased to inform him that he is mistaken. He also asks what the "Mann" monoplane is designed to demonstrate the science of aviation, and suggests that it does nothing to solve the great problems of aviation, such as stability, etc. If "Mancunian" had been at Felixstowe during the course of my recent demonstrations last September he would have, on more than one occasion, witnessed the "Mann" monoplane flying with ease and grace in winds up to 60 m.p.h., winds that dashed other models to the ground and reduced them to scrap magnesium rags and splinters.

I have not the least hesitation in asserting that the "Mann" monoplane is not only the furthest and longest flying and the most efficient, but is also by far the most stable model in the world. "Mancunian" may care to know that the "Mann" monoplane was expressly designed to demonstrate principles of efficiency and stability, and not merely to win contests under badly-drawn-up rules. It has also flown considerably over a couple of thousand feet, aided only by a scarcely perceptible wind, and wind speed does not play a great part in its published records. "Mancunian" may care to learn that on one occasion at Felixstowe Park, in a 60 m.p.h. gale, the machine actually descended in a private garden nearly a mile away from the aerodrome, but as the velocity of the wind was so excessive, I have heretofore not referred to this fact in the columns of the Press. But, nevertheless, this statement can be authenticated.

Re my third critic, Mr. Roche, of Hanwell, who seems to be an expert on the "loading" of planes, Mr. Roche gives some examples of "loading," ranging in models, he says, between 3 and 7 ozs. to the square foot. Furthermore, he declares that "the greater the loading, the higher the speed must be to give the necessary lift." Therefore, it would seem, from Mr. Roche's point of view, that a model loaded to 7 ozs. per square foot would have to be given a high velocity to enable it to fly. Now, I have a "Mann" monoplane which is loaded to 8 ozs. to the square foot, and its speed is the comparatively slow one of 20 m.p.h. What does Mr. Roche say to this? The "loading" of an average machine of the "Blériot" type is about 2 lbs. per square foot; the "loading" of typical birds is as follows: Swallow, 4 ozs. per square foot; sparrow, 6 ozs. per square foot; rook, 2 ozs. per square foot; duck, 1 lb. per square foot; and albatross, 3 lbs. per

square foot. I have never discovered a bird in the course of my experiments with a "loading" of anything like 5 or 6 lbs. per square foot! The Gordon-Bennett clip-winged Blériot, which is the only aeroplane I have ever heard of loaded to anywhere near 15 lbs. per square foot, was just as much of a "projectile" as Mr. Roche's 35 m.p.h. model, but the "Deperdussin" racer is a scientifically designed machine of a very different category. I should certainly have good reason to say, *Libera me Domine!* if I found myself anywhere near either of the two former high-velocity machines in flight, and it is to be hoped that the trials of the "still more speedy" model of which Mr. Roche speaks does not result in a charge of manslaughter!

Apart from scientific and technical objections, the great disability of the "projectioplane" is the very real danger incurred by any person or animal within a radius of a quarter-mile or so. The deliberate misuse of machines of this kind has brought about the closing of practically all public parks to aero modelists, and the latest result of an indiscriminate use of "projectioplanes" has been the rigorous enforcing of a by-law forbidding, under a severe penalty, the flying of models on Wimbledon Common. Unless the construction of "projectioplanes" is vigorously discouraged by the leading model clubs, backed up by the technical Press, we shall soon have legislation brought to bear which will make it illegal to fly models of any kind except on private property—a blow that would be keenly felt by every model flier in the country, and which would utterly paralyse the sport of model-flying for many years to come.

Subriton.

ROBERT P. GRIMMER.

[This controversy must cease after the next issue, when a final letter will be allowed to each debater.—Ed.]

## THE VISITORS' LIST.

MR. JOLLY, the manager of the Portholme Aerodrome, on behalf of Messrs. Radley and Moorhouse, reports excellent progress and most encouraging prospects. Several pupils of the right class—young sportsmen with money—have signed on, and are only waiting for decent weather to start work regularly. Both the single-seater and the tandem two-seater monoplanes, built in the R. and M. works at Huntingdon, have proved an unqualified success, and have been flown by Mr. Moorhouse in shockingly bad weather. Mr. Duigan, of Mia-Mia, has arrived with his Avro biplane, and so is the first tenant of the firm, and several other likely tenants are negotiating for sheds. Lord Sandwich, the owner of the Portholme, and of most of the surrounding country, who has hitherto been more or less indifferent to aviation, is now taking quite a lively interest in the proceedings, and Lady Sandwich has paid several visits to the ground with parties of friends. A number of Cambridge men have made passenger trips with Mr. Moorhouse, and some of them are more than half committed to take up aviation seriously. Altogether prospects are good, and the Portholme looks like taking the position it deserves as the leading aerodrome for all-round cross-country flying. Mr. Jolly assures THE AEROPLANE that one can get over a mile of perfect rolling surface in most directions of the wind, and one can get out over the surrounding country without having to fly over a tree.

MR. DUKINFELD JONES, who won his certificate on Mr. Melly's Blériot at Liverpool, called with MR. HOWARD FLANDERS to notify the fact that they had joined company in running the Flanders monoplane. Mr. Jones is a good, sound flyer, and, with further experience, may be expected to distinguish himself. Mr. H. Petre (known more familiarly as "Peter the Monk") is also associated with them, and with three such sound flyers as Messrs. Ronald Kemp, Dukinfield Jones, and Henry Petre, prospective pupils should not lack for good tutelage. The first Flanders monoplane, which has been so wonderfully successful for a first attempt, has been turned into a school machine, and already three pupils are only awaiting fine weather to make a start. As soon as certain financial arrangements are completed work will be started on new machines, including a high-speed racing monoplane. The writer has been privileged to inspect the preliminary designs for this machine, and has no hesitation in saying that, if present-day knowledge of aero-dynamic theory and practice goes for anything, it ought to be about the fastest and most efficient machine in this or any other country. Without being in anyway unduly enthusiastic one can safely aver that it is "*très chaude matière*," as the French do not say.



MR. MARIO ARIOLI, who recently returned from Italy, was very enthusiastic over the effectiveness of the Italian aeroplanes in the war in Tripoli, and said that the Italians are now ordering very large numbers of machines, chiefly from the Nieuport, Deperdussin, and Bleriot firms in France. He was, of course, most emphatic on the subject of the anti-Italian campaign which has been going on in the Italian Press, and affirmed that the execution of Arabs was entirely caused by their own treacherous actions. He heard from a near relative, who is an officer in the Italian Army, that one of the favourite Arab dodges was to conceal rifles and ammunition in the tops of palm trees, and then to climb up the palm trees, merely as peaceful citizens wishing to obtain a good view of the proceedings. From this post of vantage they then proceeded to shoot the Italian soldiers in the advanced trenches, and, having done so, they returned to earth, once more as peaceful citizens. One can quite understand, under such circumstances, that retaliation was severe.

MR. E. V. B. FISHER, looking quite himself again after his recent accident, came in on his way back to Brooklands from Margate, where he has been recuperating. His memory has apparently not suffered in the least, except that he does not recollect the accident itself, or anything that happened for about ten days afterwards, which, of course, is quite natural. He certainly looks considerably better than he had done for a long time before the accident, and it does not seem at all probable that his nerve has suffered in any way, so he should soon be seen at the wheel of an aeroplane again.

MR. D. GRAHAM GILMOUR, whose engagement with the Bristol Company has now terminated, called to say that he was going over to France for a holiday, in order to find out all about the most recent French practice in aeroplanes, and that on his return he hoped to start flying again before long. He has not decided exactly what machine he is going to fly, but it is certain that a pilot as good as he is sure of a mount, especially in view of the great amount of general testing which is bound to take place when machines are coming through for the military trials.

MR. FRANK BALLARD, who was the first pupil of Mr. Herbert Spencer, called just before leaving for Buenos Ayres, where it is his intention to open a big aviation school, equipped with Spencer machines. The Argentines are not only a very sporting and a very rich people, but are intensely patriotic, and arrangements are already being made on Mr. Ballard's behalf by friends in Buenos Ayres by which it is hoped he may have the training of a number of army officers, as well as civilian sportsmen who take up aviation. He hopes to be back in England early in the New Year, with all his arrangements cut and dried, and he will then take out with him the necessary machines, which will be both biplanes and monoplanes, and probably a crew of properly trained mechanics to run them.

MR. E. T. WILLIAMS, on a short visit from Birmingham, announced that practically all arrangements had now been made to start a proper flying ground at Castle Bromwich. Before the recent gales he had already got a big shed for his dirigible erected, but the whole thing was blown over by a gust, which registered over 80 miles an hour. This has naturally caused some little delay, but he hopes to have everything in working order by the time the regular winter calms set in.

MRS. C. DE BEAUVOIR STOCKS, our second pilot-aviatrix, called to talk over the prospects of aviation in general, and feminine aviation in particular. This lady, who undoubtedly handles her machine considerably better than does the average male pilot, is strongly of the opinion that, given a thorough understanding of the machine and its principles, there is no reason why a woman should not fly as safely as a man. She has now completed her course of instruction at the Grahame-White School, but hopes to make arrangements to continue to do a considerable amount of flying, though she has not yet decided what machine she will fly. However, her capabilities as a flyer are such that, provided she takes up a really good machine, she should distinguish herself by some really good flights before very long.

#### CLUB NOTES.

**St. Marys Model Aero Club.**—First fine Saturday for three weeks. Very fine wind, and a grand good practice put in. Murray still experimenting with O.T. machine, but owing to large surface wind was very troublesome. Mc. Johnson kite flying with good success. Members please note, club meets every fine Saturday, windy or not.

**Bristol Model Flying.**—Model flying meeting held on Downs Saturday last, when a 15-inch "Smallcombe" model flew nearly a quarter mile, and was lost to view over Sea Walls. Next flying held on Downs, Saturday, Dec. 2nd, at 3.15 p.m. First meeting of Bristol Aeronautical Society at No. 16, Berkeley Square, on Thursday (Upper Byron Place) on Wednesday, Dec. 6th, at 7.30. All interested in flying invited to bring models, drawings, etc. No one under obligation to join.—R. V. Tivy.

**Yorkshire Aero Club (Model Section).**—On Thursday, Nov. 23rd, members of Model Section visited the Blackburn Aeroplane Co., Leeds, where they examined a new two-seater military machine on course of construction. After Mr. Blackburn had explained the points of the machine, they passed on to the single seater, used by Hucks on his missionary tour. Three engines were examined, viz., a 50 h.p. Gnome, a 90 h.p. Green, and a 30 h.p. Green. Members joined in thanking Mr. Blackburn for a most enjoyable and instructive evening.—TOM WAHER, Hon. Sec.

**Brighton and District Aero Club.**—New workshops in Little Preston Street nearly fitted up. Many fine flights on Sat. 25th inst. at Brighton-Sherborne Aerodrome. Committee is considering "Superior Certificates" for quarter-mile flights.—C. H. BARNETT, Hon. Sec.

**Conisborough and District Aeroplane Society.**—General meeting after Committee meeting, at which proposed concert and flying meeting at Doncaster were discussed. Committee is considering a flying meeting (model) early in Spring, 1912. Last Saturday C. C. Allport won one first and one second prize at Sheffield. Allport already possesses two gliders. "The Patrick Alexander Glider" and a glider of Farnham type.—J. I. WEBSTER, Hon. Sec.

**Scottish Aeronautical Society.**—As result of flying carried out by Mr. G. P. Currie, duly recommended by the S. A. S. Model Aero Club, various models exhibited at the Aviation Pavilion, Glasgow Exhibition, were placed in following order of merit: Harriot, Mr. Myles (Dundee Aero Club), 83; Bleriot, Messrs. Donaldson and Mills (S. A. S. Model Aero Club), 88; Bleriot, H. K. Wheeler (Berkhamstead), 60; Short-Wright, F. Bowling (Horsely, London), 97; Wright, J. H. Alexander (Edinburgh), 57; Bleriot, J. H. Alexander (Edinburgh), 58; Bleriot, R. G. Leckie, 50; Bleriot, S. Malvesi, 47.

**The Paddington and Districts Aero Club, 1910.**—Club is arranging for huge competition early next year. Classes divided as follows: (a) Amateurs only, (b) All-Comers, (c) Professional Model Makers. Clubs holders for biggest competition in the country, and prizes to match, next year larger. Prizes will be worth winning; entries expected to be large, hence this early notice. New members wanted also for the H.A. Kneb Aero Club. Use of workshop, glider, private ground, all competitions, debates, lectures and meetings. Particulars, both clubs, from SECRETARY, 2, Edbrooke Road, Paddington.

**The Kite and Model Aeroplane Association** has now been formally recognised by the Royal Aero Club as the paramount body in this country to govern modern aeroplanes, and the Council, as a first step towards governing models, have sent out a circular asking the various clubs to become affiliated to the Association, for the purpose of registering the performances of model aeroplanes.

Official observers for the London district have been appointed, viz.:—Major B. Baden-Powell, Messrs. T. W. K. Clarke (A.M.I.C.E.), T. O'B. Hubbard, J. H. Leedeher, M.A., H. F. Lloyd, G. P. Bragg-Smith, E. W. T. Hing, and W. H. Akhurst (Hon. Sec.).

The Council announce that they are prepared to consider applications for the appointment of official observers and grounds in various districts, and have a draft of Rules, with Appendix, and a form and Observers' Report Form to be used in connection with the registration.

With regard to the question of affiliation of Clubs, the Association's rules are as follows:—

(1) Any clubs wishing to be affiliated to the Association shall satisfy the Council that they are properly constituted clubs. (2) Any gentlemen wishing to form a Town or County Branch shall obtain the consent of the Association. (3) The subscription for each Club or Branch shall be 10s. 6d. per annum (payable during the first week of each year). (4) The Council shall have power to affiliate any Foreign or Colonial Associations or Clubs for the purpose of International Competition, etc., without payment of a subscription. (5) All Clubs or Branches of the Association shall be eligible to compete in any competition, provided that they are affiliated and have paid their subscription. (6) Each Club or Branch shall forward to the Secretary, with their annual subscription a return giving names and addresses of all officers and members, and the names must be arranged in alphabetical order.

W. H. AKERHIST, Hon. Sec.

**Worcester Model Aero Club.**—First flying meeting of Worcester Model Aero Club will be held at Pibworth, Little Heath, on Saturday next, December 4th, at 3 p.m. Those interested are cordially invited to a tend. First of series of monthly competitions will be held on Saturday, January 6th at 3 p.m. Accessory catalogues would be welcomed.—STANLEY S. STARS (Hon. Sec.), Victoria Institute Science and Technical Schools, Sansome Walk, Worcester.

**N.B.**—Club Notes must be posted to 166, Piccadilly, to arrive not later than first post Monday morning.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AEROPLO, London.

Telephone: Mayfair 5407

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
3 months, post free	1 s.	3	3 months, post free	1 s.	3	3 months, post free	1 s.
6 "	"	3	6 "	"	3	6 "	"
12 "	"	6	12 "	"	6	12 "	"

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Said there is any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.

## MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted ONLY—18 words **1/-**. 1d. per word after.

### FINANCIAL.

**S**YNDICATE being formed to exploit well-tried all-British Monoplane. For full particulars and to see machine in flight, apply Box No. 404, THE AEROPLANE.

### MACHINES.

**£400** SPECIAL OFFER of twelve AVRO Biplanes complete with 35 h.p. Green engine. Usual price £600. Offer withdrawn November 30th. Write at once for particulars.—A. V. ROE & Co., Brownsfield Mills, Manchester.

### ENGINES.

**60** H.P. Green Engine, practically new, Dual Ignition, Flywheel, Pumps, Radiator, all perfect, going cheap. PLANES LTD., Duke Street, Birkenhead.

**1912** ALVASTON aviation engines. Fitted with latest improvements. The only reliable engine that appeals to those of moderate means. May we send you full particulars?

**1912** ALVASTON engines. We have decided to supply a limited number of components for building our 20, 30 and 50 h.p. (including licence to construct) at moderate prices, in order to enable mechanics having the skill to assemble an aeroplane engine to produce a successful power plant at small cost.

**1912** ALVASTON engines. Vibrationless, robust, light, extremely efficient. They have pump lubrication, horizontal opposed cylinders, all steel parts forged from Chrome Vanadium steel. ALVASTON MOTORS, Derby.

### PROPELLERS.

**P**ROPELLERS:—Avro propellers of proven efficiency. "Pashley fitted Avro propeller, suddenly found troubles disappeared, and flew five good circuits." [AEROPLANE.] Equally good results if fitted to your machine. A. V. ROE AND Co., Brownsfield Mills, Manchester.

### CHAUVIÈRE'S FAMOUS "INTEGRAL" PROPELLERS

hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

"**B**LACKBURN" propellers supplied, and successfully used on all the leading motors. THE BLACKBURN AEROPLANE Co., Leeds.

### TUITION.

**£25** TUITION until brevet is won on Blériot and Chanter monoplanes; or £65 including all breakages. CHANTER, Brighton Aerodrome.

**£50** TUITION in flying till certificate is won. Three-quarters of the prizes at Weybridge during 1911 won by AVRO pupils. The AVRO School for most thorough and all-round instruction. A. V. ROE AND Co., Brownsfield Mills, Manchester.

**£75** TUITION for Aviator's certificate on both Deperdussin and Blériot Monoplanes, Insurance against breakage and third party risk. RETURNED to pupil in the event of no breakage. Perfect equipment. Personal instruction. Write for agreement form. W. H. EWEN Lanark Aerodrome, Lanark.

**£15** RETURNED to pupil in the event of no breakage. Perfect equipment. Personal instruction. Write for agreement form. W. H. EWEN Lanark Aerodrome, Lanark.

**H**ERBERT Spencer Flying School. Brooklands Aerodrome, Weybridge. Tuition from £40. Passenger flights from £2 2s.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION Co., 185, Hope Street, Glasgow, or Barrhead.

**D**EPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; special terms to Army and Navy Officers. For full particulars apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD. 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

**F**ILEY AERODROME. Tuition on Blackburn or Blériot Monoplane. For particulars apply BLACKBURN AEROPLANE Co., Leeds.

### MISCELLANEOUS.

**L**IGHT work-shop with partitioned-off offices to let in London. Suitable for aeroplane construction. Apply UNIVERSAL AVIATION Co., LTD., 166, Piccadilly, W.

**H**ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**F**OR SALE AT BARGAIN PRICES.—A three years' accumulation of new and slightly used aeroplane parts as follows:—Fuselage for biplane or monoplane, Simms magneto, 1 White and Poppe and four Green carburetors, four control levers, two rudder foot levers, metal foundations for 50 h.p. Gnome, 2 steel shock-absorber springs, Blériot type, pair Lamplough radiators, large assortment propellers, wheels, tyres, tanks, cushioned seats, strainers, ferules, rudders, elevators, ailerons, 3 sets monoplane planes, sockets and fittings, etc., etc. Must clear makeroom. AERONAUTICAL SYNDICATE, LTD., Flying Ground, West Hendon, N.W.

### FLYING MODELS.

**O**UR TURN NOW. We have received over 500 model orders in two months, and we have to keep our customers waiting 2 days; **we do not refuse your** further orders, we employ more labour. We are essentially a business firm, not spare time model makers at home. Our bargains this week:—**Rise-off-ground-model**, guaranteed flyer and prize winner, post free 5/6. **Quarter mile prize winner**, 4/- post free. Guaranteed flyers, best workmanship, equal to 15/- so-called scientific models. All accessories cheapest in trade, send 3d. stamp for list. WESTON HURLIN Co., Temporary address, 2, Edbrooke Rd., Paddington.

"**M**ANN" MONOPLANE.—Owing to the enormous demand for this machine, we are unable, for the present, to accept any further orders. What we can still supply by return of post are parts for constructing a "Mann" Monoplane 5/6, "Mann" propellers 3/6 per pair, "Mann" geared winders 5/6, "Willis" 1/4 inch strip rubber 1/6 per dozen yards, and "Willis" lubricant 9d. per bottle. From all large toy shops and stores, or post free in THE UNITED KINGDOM only from the sole manufacturers, WILLIS BROS., 14, Wellington Square, Hastings.

**M**ODEL PROPELLERS—Genuine CHAUVIÈRE—sin., 10in. and 12in. diameter, always in stock. GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C.

**A**LLWKATHER single propeller Monoplane, guaranteed flight 1,000 ft., price 10/6 post free. THOROGOOD Co., Icknield Way, Letchworth, Herts



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, NOVEMBER 30th. 1911

No. 26

The Fastest Passenger-Carrying  
Monoplane (with 50 h.p.  
Engine) yet produced

IS THE NEW

# "BRISTOL"

## Two-Seater Military Monoplane.

Price (complete with 50 h.p. Gnome Engine) £950

SINGLE-SEATERS

Racing Type (with 50 h.p. Gnome Engine) £900. Popular Type (with 28/37 h.p. Engine) £500

The Principal Features of these Machines are—

PERFECT STABILITY AND CONTROL, AND UNSURPASSED  
EXCELLENCE OF WORKMANSHIP AND MATERIALS.

TUITION on these  
Monoplanes and on Biplanes  
is obtainable at—

The "Bristol" Flying Schools  
at  
Salisbury Plain and Brooklands

whose Perfection of Equipment, Tuition Staff, and methods, have secured for them nearly as many certificates as all other English Schools combined; and where more than half of England's Naval and Military Aviators have been trained.

Special Fee to Navy and Army Officers £75 including Tuition on Monoplane or Biplane, and Insurance against Breakeage and Third Party risk.

For full particulars apply THE SECRETARY—

British & Colonial Aeroplane Co., Ltd.,  
FILTON HOUSE, BRISTOL.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

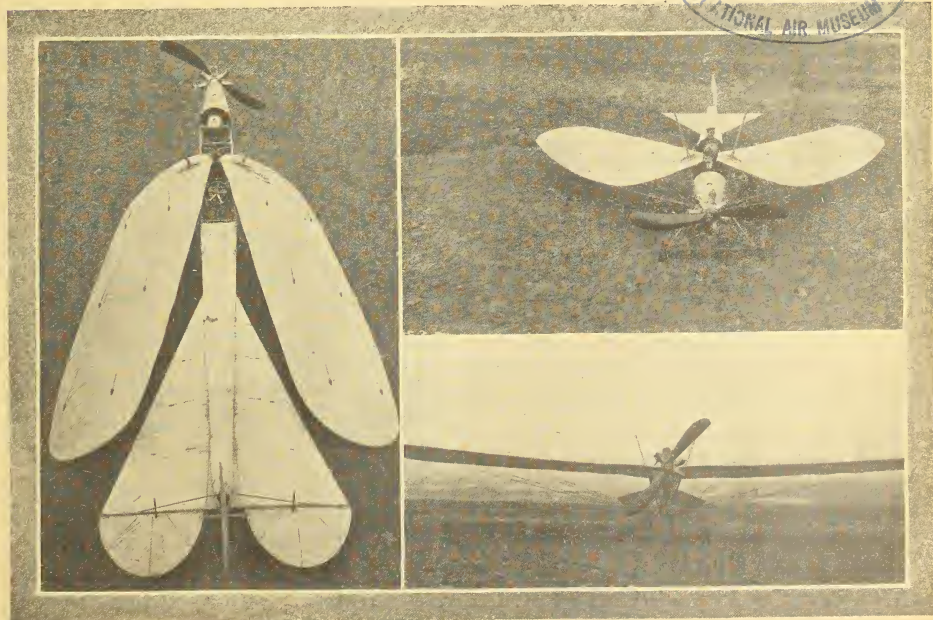


Vol. I.] [REGISTERED AT THE G.P.O.]  
AS A NEWSPAPER.

THURSDAY, DECEMBER 7th, 1911.

No. 27

## WHAT IS IT ?

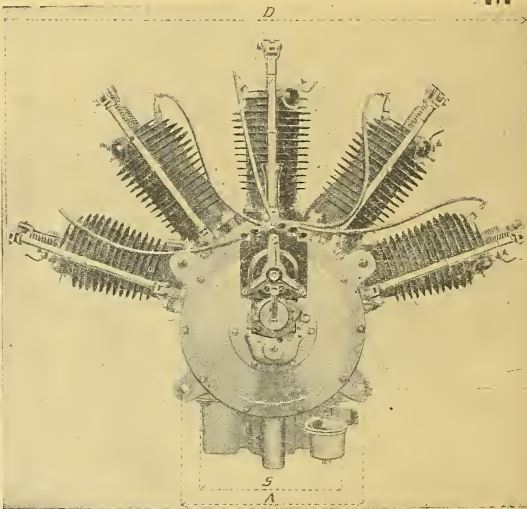
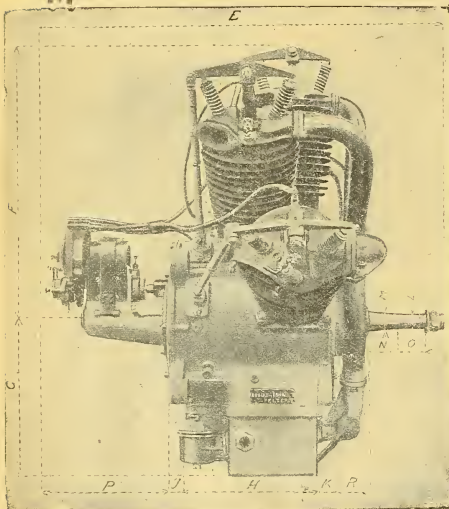


The Malicet-Mooney Monoplane, in which the wings are folded by turning a wheel-alongside the pilot's seat. The idea is that, after alighting, the machine can "taxi" easily under its own power, even along a road. If he could fold the wings thus, without disturbing the centre of pressure, the inventor would have discovered the long-sought "variable speed" machine.

SMITHSONIAN INSTITUTION OCT 27 1911



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

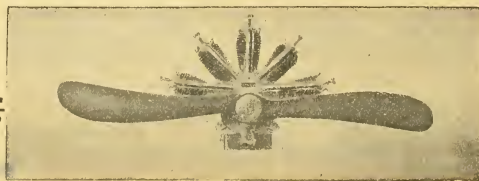
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"	

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.



## CONTENTS.

	PAGE
OUR AERIAL DEFENCES ... ..	627
QUESTIONS IN THE HOUSE ... ..	630
THE DEPUTATION TO THE HOUSE OF COMMONS	632
AIR CURRENTS ... ..	634
THE WEEK'S WORK... ..	636

	PAGE
THE BLERIOT TWO-SEATER... ..	640
A VISIT TO THE AVRO WORKS	
BY "A MERE WOMAN" ... ..	641
CORRESPONDENCE ... ..	643
THE VISITORS' LIST ... ..	645

## Our Aerial Defences.

**The Admiralty.**

It seems almost impossible to gauge the extent of the revolutionary tendencies of some Radical politicians. Those of us who prefer to see the nation run on the good old-fashioned lines must have received many rude shocks of late, but none more unexpected than when Mr. Churchill persuaded Prince Louis of Battenberg to become a Sea Lord.

Hitherto our various princes have occupied prominent positions it is true, but generally positions in which they had much to do and say without much real power for good or evil. Now we find one in a position where he can say nothing, but must do an immense amount of work, which must have most important results one way or the other.

Not the least revolutionary aspect of Mr. Churchill's action is that he has got the right man in the right place, for there is not a man in the Navy who knows Prince Louis who does not realise that as an officer and as an administrator he is so good that no one man can be said to be better for the post.

An officer who has served under him remarked to the writer recently, "His way of doing things seems to be,—If there's nothing to do, don't do it; if there is anything to do, we have got to be first"—a motto which might with advantage be laid to heart by those officers who are everlastingly worrying their men with unnecessary duties, which simply make them stale and unhandy when the pinch comes.

It is, however, in matters of aviation that Prince Louis of Battenberg's appointment is primarily of interest to readers of *THE AEROPLANE*. It has been known for some time past in the inner circle that, though the Admiralty has not as yet made any great public moves towards the production of naval aeroplanes, nevertheless, the chief officials have been taking a very keen interest in what has been going on, and have been laying plans quietly. The Navy has a way of saying nothing until it does something, and when the Admiralty moves, one may confidently expect something good. The Barrow dirigible "May Fly" can be set down as a youthful indiscretion, for accidents will happen in the best regulated families.

Prince Louis has long been regarded as the hope of naval aviators, and with his new appointment hope becomes almost a certainty. He has on numerous occasions visited the Eastchurch Aerodrome, and has taken a lively interest in the doings of the naval officers who were then undergoing their training there, even doing some flying with them himself. If not actually a skilled aviator, he has, at any rate, a far better working knowledge of aviation than any

other highly placed official in the country, and one may look forward with confidence to a very active programme under his direction.

**A New Ally.**

The agitation in favour of British aeroplanes received valuable assistance last week when Mr. J. Owen, of *The Westminster Gazette*, entered the lists for the first time as a supporter of home industries. *The Westminster* is generally regarded as by far the most influential of London Liberal journals, and it is, therefore, the more satisfactory to see it joining in a crusade which has hitherto been carried on solely by papers of opposite political views.

Mr. Owen, in his typical Celtic way, hits hard, and does not mince words. He attacks the permanent officials at the War Office and the civilian staff at the Balloon Factory with a vehemence unsurpassed even by this journal, to which he refers as "Our fighting contemporary *THE AEROPLANE*."

Says he, "So far, indeed, as its aerial equipment is concerned the Army is actually worse off to-day than it was in 1908. The continued refusal of the War Office to officially recognise the aeroplane has not only discouraged enterprise but kept capital out of the industry, which might have been employed so as to enable an English machine to score over its foreign rivals in the forthcoming tests. The men we are sure of. It is the machines we want, and machines we must have, in sufficient numbers to put us on a level with other countries." Mr. Owen notes that Turkey has just ordered five Deperdussin monoplanes, and has acquired the services of the Deperdussin pilot—Legrand—to act as chief instructor of the new military aeroplane school at Constantinople.

He points out that Germany has learned the lesson hardly enough, and she has to thank her dirigibles for her backward position in aviation science; but that she has freely and frankly confessed her mistake in pinning her faith to the illusive gas-bag is proved by the fact that the Imperial Government proposes to vote the sum of 30,000,000 marks (£1,500,000) to put down a huge aerial equipment.

Finally, Mr. Owen says:—"The first question to be settled, however, is the terms of the competition; and if the Government makes the concession that it shall be an endeavour to stimulate the British industry, it will give a fillip to a business that is sorely in need of such help as only the military authorities can give."

Altogether, Mr. Owen has done good service to the cause, his article coming, as it does, before the authorities have definitely fixed their programme. One is, however, now practically sure that the British



industry is going to have a fair chance, and that, even if there is not exactly a fortune waiting for everybody concerned, the British manufacturer will have a really fair chance of showing what he can do.

#### The Real State of Affairs.

Last week Colonel Seely stated in the House of Commons that we have twelve effective aeroplanes for the Air Battalion, and three more being "rebuilt" by the Army Aircraft Factory. To explain this statement it is necessary to note that the answer given by any Secretary of State to a question in the House is compiled from material supplied by the permanent officials of his department, and apparently etiquette demands that the said material shall be regarded as strictly accurate.

This particular statement depends for its truth on a nice distinction between the words "effective" and "efficient." It is strictly true that we have twelve "effective" aeroplanes, but it is also true that we have only two "efficient" machines. So far as one can gather, the "effectives" are—seven Bristol biplanes, capable of a speed of 36 to 38 miles per hour; one "military" Farman, of about the same speed; one Blériot two-seater, formerly the property of the late Lieutenant Cammell, R.E., an excellent old machine which has been much broken and repaired, and is fitted with a 70 h.p. engine which gives a speed of 60 miles per hour when running well, but cannot be depended upon to run regularly; and presumably a biplane built last year by a Mr. de Havilland, who is now an employee at the Aircraft Factory, and taken over with him when he joined the staff.

These ten machines are "effective," in that they fly well, for their type, but all of them would be hopelessly outclassed by the new Bristol military monoplane, the Flanders, the Martin-Handasyde, the Radley and Moorhouse, the Valkyrie, the Blackburn, or the forthcoming Vickers or Short monoplanes—to name only a few British machines capable of doing more than 60 miles an hour. All ten are worth keeping in flying trim, because they are quite good enough

to be knocked about by newly joined officers in need of training, or by the non-commissioned officers who will have to be taught to fly sooner or later; but none of them, except the Blériot, is fit to use in a campaign against the modern machines owned by Continental powers.

Our only "efficient" machines are the Nieuport, which can only be flown by Lieutenant Barrington-Kennett, and the Bréguet biplane, which can only be flown by Lieutenant Hynes, and it is more than doubtful whether the latter can be flown in a big wind, for it is not so powerfully engined as are the modern military Bréguets owned by France. It is therefore just as well to realise, quite clearly and dispassionately, that the total *material* of the efficient aerial forces of the British Empire is one monoplane and one biplane, provided that neither has been broken up by the time this appears in print.

As regards pilots, we are just about on a par with our position as regards machines. Captain Fulton, commanding the aeroplane section, must have so many purely administrative duties that he can scarcely be reckoned as a military aviator for war purposes, even though he is such a fine flyer. Captain Burke, another fine flyer, is a married man, and, in any case, is quite likely to be transferred to other duties ere long. There remain then Lieutenants Reynolds, Conner, Barrington-Kennett, and Hynes as the total *personnel* of our aerial forces.

#### The French Touch.

The French have a wonderfully neat way of combining sense and sentiment. For example, General Roques, the officer commanding the French air-fleet, having decided that "military aeroplane" is a long and awkward phrase, has decreed that the military machines shall in future be known officially as "avions," as a compliment to Clément Ader and his old *Avion*, the first power-driven machine which ever really flew, its record being 300 metres in October, 1897.

#### The Flying M.P.

Senator Reymond, of the French Upper House, who was the first Member of Parliament in the world to take his ordinary certificate, recently passed the tests for the French superior *brevet* as well. We are still waiting for an M.P. who can fly, although, luckily, we have quite a number of members who take an active interest in military aviation.



Commander Schwann on the Avro Biplane, formerly flown by Pixton at Brooklands, since fitted with floats, and now in hospital. It is fitted with a 35 H.P. Green engine and is the first British machine to rise from water. (See page 638.)

THE

**GRAHAME-WHITE****AVIATION CO., Ltd.**

(First United Kingdom Aerial Mail Carriers),

*Proprietors of***The London Aerodrome, Hendon, N.W.,**

The finest equipped and most accessible Aerodrome in the United Kingdom.

**NOTICE**TO MANUFACTURERS, EXPERIMENTERS,  
AVIATORS AND AMATEURS.**In Our Works,**

Which are fitted with the best of MODERN TOOL EQUIPMENT in charge of FIRST CLASS WORKMEN, there is no branch of aeroplane construction which we do not handle,

OUR MACHINERY IS SO UP-TO-DATE,  
OUR ORGANIZATION SO COMPLETE.

We can carry out your designs or effect your repairs with greater expedition, economy and satisfaction than any other firm in England.

**HANGARS TO LET.****IN OUR FLYING SCHOOL FOR A FEE OF 50 Gns.**

Not only do Pupils receive Practical Tuition in Piloting an Aeroplane until they obtain their Pilots' Certificate, but in addition are given invaluable experience in the Workshops Assembling and Adjusting Motors and Machines.

Full particulars on application to—

**THE GRAHAME - WHITE AVIATION CO., LTD.,**Phone—  
KINGSBURY 22.

THE LONDON AERODROME, HENDON, N.W.

Wires—'VOLPLANE' or  
'CLAUDIGRAM, LONDON.'



## Questions in the House.

(Thursday, November 23rd.) (Oral Answers.)

MR. JOYNSON-HICKS asked the Under-Secretary of State for War whether the French Government prizes in the recent Army aviation competitions were confined to machines of French manufacture; whether he has had full reports upon such competitions; and, if so, what is his object in providing prizes for a competition which can only establish the same facts?

THE UNDER-SECRETARY OF STATE FOR WAR (COLONEL SEELY): The report of the officers of the British Army who attended the recent French competitions has not yet been received at the War Office. I am not, therefore, as yet in a position to reply to the question.

MR. JOYNSON-HICKS: Will the right hon. gentleman consider these reports before he issues the conditions of the Army tests?

COLONEL SEELY: Oh, yes, certainly. We shall consult them most carefully before we proceed finally.

### Munitions of War (Manufacture).

MR. JOYNSON-HICKS asked the Under-Secretary of State for War whether, in view of the fixed policy of all Governments to manufacture munitions of war at home and of the desirability of encouraging the manufacture of English aeroplanes, which alone would be obtainable in time of war, he will reconsider the position before making the final arrangements for the proposed competition?

COLONEL SEELY: The hon. Member is presumably alluding to the forthcoming competition. The object of the competition is to find out the best pattern for military requirements, and it is therefore intended that the competition for the chief prize shall be open to all manufacturers, whether British or foreign.

MR. JOYNSON-HICKS: What I wanted to get at was whether it is not a fact that aeroplanes to be used in war must of necessity be manufactured in England; therefore will the right hon. gentleman not confine the competition to the British manufacturer?

COLONEL SEELY: I have already stated in this House that the aeroplanes which we shall require must ultimately, for obvious reasons, be manufactured in this country. But that does not imply that it is wise to limit the competition. We want to find out the best type of machine.

MARQUIS OF TULLIBARDINE: May I ask that, a competition having taken place in France that has satisfied the French Government, it will be very unfair to the industry in this country that it should have to compete against the finished industry in France?

COLONEL SEELY: We have to find out the best machine. We shall take the opportunity of encouraging British manufacturers of these engines of war as the occasion arises.

MARQUIS OF TULLIBARDINE: I give notice that I will move the adjournment of the House to call attention to the matter.

(Friday, November 24th.) (Written Answer.)

MR. SANDYS asked the Under-Secretary of State for War if he will say for how long it is proposed that officers who have obtained certificates will be attached to the Army Air Battalion for instruction in military aviation?

COLONEL SEELY: No fixed time can be stated at present.

MR. SANDYS asked the Under-Secretary of State for War whether he is aware that officers of the Air Battalion making cross-country flights are put to expense which, under existing arrangements, they have to meet out of their own pockets; whether officers who made cross-country flights early in the summer have not yet been reimbursed with their expenses; and whether he will take steps to prevent this branch of practical aviation work from being restricted to officers who possess large private means?

COLONEL SEELY: It is not known to what cross-country flights the question refers. It is not proposed to reimburse officers for flights made on their own initiative and independent of any official instructions.

### Army Aeroplanes and Dirigibles.

(Tuesday, November 28th.) (Oral Answers.)

MARQUIS OF TULLIBARDINE asked (1) whether it was intended to have a British test or competition for foreign aeroplanes before purchasing them for the British Army; and (2) whether it was intended to enter British and foreign aeroplanes for the same tests and competitions in competition against each other before purchasing for the British Army?

COLONEL SEELY: I will reply to the noble lord's two ques-

tions together. Under the proposed prize competition all aeroplanes submitted for trial will be subjected to the same tests, but this competition is for prizes and not for orders to be subsequently placed.

MARQUIS OF TULLIBARDINE: Does not the right hon. gentleman think that the French Government would be sufficient for the aeroplanes bought in France for the British Army, and that it would be better to use up the prize-money for British aeroplanes to encourage our industries, instead of subsidising an already subsidised industry in France?

COLONEL SEELY: Probably it would be better not to answer any questions on this point until we are able to lay before the House the details of the proposed competition.

MR. FELL asked if either of the dirigible balloons at Aldershot were ready for use; if it was proposed to practise with them in the same way as was being done in Germany and France with dirigible balloons; if there were any officers and men trained for the use of them; and if they had had any lessons on the Continent in the handling of these machines?

COLONEL SEELY: One airship, the *Beta*, is ready for use, and practice will be carried out when the conditions are favourable. There are officers and men trained for the use of dirigible balloons. The reply to the last part of the question is in the negative.

MR. W. PEEL asked whether aeroplanes manufactured in this country had been subjected to any tests by the War Office for the purpose of ascertaining the efficiency and durability of such machines for military purposes in comparison to those manufactured abroad; and, if so, whether it was the intention of the Government to place an order for a number of these machines of British manufacture, thereby assisting a new industry and enabling mechanics engaged in work of this nature to stop in their own country?

COLONEL SEELY: Any pattern of aeroplane, whether manufactured abroad or in this country, which is considered suitable for military purposes and which is desired by the Air Battalion, is considered for purchase. Certain machines have already been purchased and others are under consideration. The immediate object of the Government is to ascertain, by trial, which pattern is most suitable to Army requirements, and the orders contemplated at the present stage are not important enough materially to affect employment in the manner suggested in the last part of the question.

MARQUIS OF TULLIBARDINE: Will the choice lie with the commanding officer?

COLONEL SEELY: Not finally.

MR. PEEL asked whether, in view of the recently declared intention of His Majesty's Government to purchase a number of aeroplanes successful in the French military trials at Reims, His Majesty's advisers could give some assurance that manufacturers of aeroplanes in this country would have an opportunity of supplying their own Government with machines which were known to be suitable for military purposes?

COLONEL SEELY: I am not aware of any such declared intention of His Majesty's Government.

### Army Aeroplanes.

(Tuesday, November 28th.) (Written Answers.)

MR. JOYNSON-HICKS asked how many effective aeroplanes are now owned by the War Department; how many of them are of English and French manufacture; and how many of each sort have been purchased since January 1st, 1911?

COLONEL SEELY: There are twelve effective aeroplanes at present owned by the War Department, and three more are under reconstruction in the factory. Of these, nine are of English and six of French manufacture. Seven aeroplanes of English and four of French manufacture have been purchased since January 1st, 1911.

### Army Aviators (India).

COLONEL YATE asked whether the Secretary of State will consider the advisability of giving officers of the Indian Army, on getting their pilot certificates as aviators, the same gratuity of £75 as is now given to officers of the British Army?

MR. MONTAGU: This is a question upon which the Secretary of State must await proposals from the Government of India, and must depend upon an intention to institute an air battalion or some similar organisation.

### British-Made Aeroplanes.

(December 1st.) (Written Answer.)

MR. JOYNSON-HICKS asked the Under-Secretary of State for

# THE BRITISH-BUILT DEPERDUSSIN MONOPLANE

—2 and 3 seater, Military Type—

With 80 H.P. ANZANI or 100 H.P. GNOME Engine, is now manufactured in

**OUR LONDON WORKS.**

## THE DEPERDUSSIN MONOPLANE SCHOOL AT BROOKLANDS

has more Machines than any other Monoplane School in England.

THOROUGH TUITION ON  
DEPERDUSSIN MONOPLANE **£75.**

Including all Expenses, Breakages if any, and Third Party Insurance.

A Prize of £15 is offered to all Pupils who obtain their Pilot's  
Certificate without damage.**"Deperdussin" Monoplanes, complete with Engine, from £450**

APPLY FOR PARTICULARS TO

**The British Deperdussin Aeroplane Syndicate, Ltd.,**

Phone: 280 Gerrard.

**30, REGENT STREET, LONDON, S.W.  
Works—Newington Green Rd., N.**

Wire: "Monodep, London."

## SOUTH EASTERN AND CHATHAM RAILWAY.

# Aeroplane Exhibition in Paris

REDUCED RATE TICKETS  
LONDON ——— FROM ——— to ——— PARIS

Will be issued on December 21st, 22nd, 23rd and 24th

Via  
**Dover & Calais**

And

Via  
**Folkestone & Boulogne**

(Sea Passage 60 to 80 minutes).

**1st Class—58/4****2nd Class—37/6****3rd Class—30/-**

AVAILABLE 15 DAYS.

For full details, together with particulars of the Ordinary Fares and Services, apply to Continental  
Traffic Manager, S.E. & C.R., London Bridge Station, S.E.



War whether, in view of the fact that French aeroplane manufacturers are already so fully supplied with orders from their own and other Continental Governments that they cannot supply machines to the British Army in quantities within a reasonable time, he will take immediate steps to purchase machines from such British manufacturers as may prove their ability to turn out satisfactory aeroplanes?

**COLONEL SEELY:** Will the hon. member kindly refer to the reply to the question put on this subject by the hon. member for Taunton on the 28th inst., to which there is nothing at present to add?

#### Aviation Officers.

**MR. JOYNSON-HICKS** also asked whether the French Army

## The Deputation to the House of Commons.

On the evening of December 5th some twenty-five members of the deputation appointed at the meeting of those interested in the aeroplane trade waited on Colonel Seely at the House of Commons. The deputation was introduced by Sir Chas. D. Rose, M.P., who pointed out that if the conditions of a prize competition without orders was rigidly adhered to, we should be unfavourably situated as regards other countries.

**MR. DUMNE** pointed out that all permanent sources of supply of war material must exist in this country. After the failure of the sporting side, the French Government set to work to support their aeroplane industry as a national asset, and evolved a scheme to support all promising firms. Every type was fostered. Such an asset was not purchased by giving prizes. One might buy a machine and copy it, but it would soon be obsolete, and copying did not enlighten one as to why a machine was successful. Like Germany and Austria, we must make our own machines.

**MR. LEDEBOR** said that if in a competition one got the "best" it would soon be out of date, and one would have to repeat the process a year later. By postponing the competition and giving conditional orders now, one might approach finality in design. Further, it was as yet impossible to lay down the full requirements for military work, and a competition would evolve only a single type. We should evolve as many types as possible, and the best machine abroad might not be the best for England. If a foreign machine won, and had to be copied, the contracts should be split up among many firms.

**Captain Wood** said that constructors were able to meet the French demands owing to big orders which were to follow. These machines were unsuitable to deal with German dirigibles. England was a country of small enclosures, and though the machines might be only used in war abroad, the pilots would have to practise in England. The French pilots in the Trials grumbled because out of 180 kms. there were 60 kms. without good landing-ground. A British pilot would be glad if he got 60 kms. of good ground out of 180. Aeroplanes were useless without mechanics, and mechanics took years to train. There were many identical Blériots in the "Circuit of Britain," but the winner had the pick of the mechanics. Even if we copied a foreign machine, we could not do it properly without the designer's brain. It was true that if conditional orders were given the Army might be embarrassed for shed accommodation, but in France constructors' sheds and aerodromes were used by the Army, and officers were encouraged thus to fly from one aerodrome to another. There was a popular idea that the rotary engine was the only good engine, but there were others less complicated and quite as good. The world's duration record was held by an engine of a heavier but simpler type.

**MR. HOWARD FLANDERS** said that many constructors in this country had spent much money and gained experience as good as any abroad, but they could not always live on hope. He did not ask for a subsidy, but merely that machines should be ordered after they had passed Army requirements. He would like to know the type favoured. The right material was difficult to get, and this country had better material than France. France used hot-air-dried Canadian ash, a dangerous material; we used English ash. Silver spruce was unknown in France, where poplar was used. But dealers would not supply their best material for small orders.

**MR. FRED MAY** said that British manufacturers were ready to compete, given equal conditions. Rotary engines could not be efficiently silenced, and skilled mechanics to keep them in order were impossible in time of war, nor could the engines be got in war time. There were British engines that used less fuel, and were lighter when equipped for a 6-hour run. The rotary was the first successful engine, and its popularity had been gained at the expense of better engines, both foreign and British. A big competition could only be won at great cost. In the "Circuit of Britain" twenty-four rotary engines started and three finished. Two British engines started, and

regulations provide that officers engaged in the aviation department are to be treated as on full war footing with, in the case of accident, similar allowances and pensions to themselves or their widows as they would receive if wounded or killed on active service; and whether such conditions also apply to the English aviation officers?

**COLONEL SEELY:** The suggestion contained in the question that French officers engaged in the aeronautical service be placed on a war footing, and that in case of injuries they or their wives receive pensions or allowances as if the injury had been incurred on active service, is inaccurate. Their service is only regarded as active service for purposes of promotion. The conditions for our own aviation officers are not settled.

one finished, and that was looked after by a young mechanic eighteen years of age. In the Patrick Alexander £1,000 competition, which involved a twenty-four hours' run, no foreigner entered, for it seemed that the test was too severe.

**MR. BURFORD** urged the War Office to consider the position of manufacturers. Lack of official encouragement meant experience and organisation being lost to the industry. Lack of trained men meant imminent danger to the nation. Firms were ready with stocks of material, and he welcomed competition, but in the meantime time was being lost.

**Colonel Seely**, in his reply, showed a thorough grasp of the subject, and full sympathy with the British constructors. He expressed his pleasure at being able to discuss the question with the manufacturers. As to whether there should be a competition or not, he said that valuable information would be gained. The idea arose from a deputation of members of Parliament of all parties, who waited on Lord Haldane last summer. He was surprised that anyone wanted the competition postponed, and, as for finality, they would all be dead before finality was reached. They hoped to learn from the competition and then to order machines, so he suggested that the sooner the competition was held the better. Why demur at having the competition open to the world? He had not said that the chief prize, open to the world, was the only prize.

It seemed to be assumed that the chief prize would be won by a French machine, but both Mr. Flanders and Mr. May had said that the all-British machine was as good as the French. He thought competition would be the more keen if it lay between English and French. It might evolve a new type also. For instance, silence was desirable in a military machine. He offered that as a suggestion as to the line of thought some of them might follow.

It was not proposed to offer a prize and then copy the winning machine in a Government factory, but they did propose that all army machines should be built in the United Kingdom. Their policy was the same as in respect to all other war material. He had not said that they would not order machines before the competition. A hundred officers were to be trained as soon as possible, and machines would be needed to mount them.

**Colonel Seely** recommended constructors to look after the needs of the Navy as well as the Army. The Navy was taking a lively interest in the subject and the new First Lord was actively interested. The Navy would undoubtedly follow the same policy. However, he suggested that if the manufacturers wanted to establish a sound industry they could not depend on the Army and Navy alone. Even France had only 220 aeroplanes at present. He pointed out that if aeroplanes were to become vehicles of ordinary use, they should turn their attention towards producing machines which were much safer than anything at present known. Too many aviators were killed with the present-day machines.

**Colonel Seely** asked a number of extremely pertinent questions of various members of the deputation, and suggested that if they wished the competition to take place later than June they might come to a decision among themselves, and he would put that decision before the proper authorities.

**Sir Charles Rose**, having thanked Colonel Seely for receiving the deputation, the Under-Secretary for War left the Committee Room, and the deputation then, with the Earl of Hardwick in the chair, debated the question of postponement.

It was ultimately decided to send a suggestion to Colonel Seely that early in September would be the most suitable time to commence the competition. The reason for this decision was that the months of June, July and August would be more suitable for the tuning up of new type machines than March, April and May would be.

On the whole the result of the meeting may be regarded as quite satisfactory, and the manufacturers can await the official announcement of the competition in a fortnight's time with something approaching equanimity.—C. G. G.

# The All - British GREEN Aero Engine for RESULTS

The Green Engine **does** things.

- 1909 J. T. C. Moore-Brabazon won the "Daily Mail" £1,000 Prize, offered to the first Britisher to complete a Circular Mile flight—with a "GREEN."  
 1909 J. T. C. Moore-Brabazon won the first Michelin Cup for long distance flight, 17 miles—with a "GREEN."  
 1910 S. F. Cody won the Long Distance Michelin Competition, 182 miles—with a "GREEN."  
 1910 In the Patrick Alexander Competition, the only competitor to complete 24 hours' run—was a "GREEN."

It helps to make history.

- 1911 S. F. Cody won the Cross Country Michelin Competition, 125 miles—with a "GREEN."  
 1911 S. F. Cody won the Long Distance Michelin Competition, 261 miles 800 yards—with a "GREEN."  
 1911 For the Circuit of Great Britain one "GREEN" entered, one "GREEN" engine finished, untouched in any respect, 1,010 miles' flight.  
 1911 The first "Higher Certificate" was won by S. F. Cody—with a "GREEN."

Performances like these must count

Catalogues  
Free.

**THE GREEN ENGINE CO., LTD.,**

Sole Licencees under The Green's  
Motor Patents Syndicate, Limited,

**25, BERNERS STREET, LONDON, W.**

Maker for the Patentes: **THE ASTER ENGINEERING COMPANY, LIMITED.**

## BLERIOT MONOPLANES

The most successful aeroplanes in all the great Cross-country Races of 1910 and 1911.

## TUITION

AT THE 'BLERIOT SCHOOL,' HENDON

# £75

INCLUDING ALL EXPENSES: THIRD PARTY INSURANCE AND BREAKAGES (if any).

£10 returned to Pupil if he obtains his Pilot Certificate without Breakages

Passenger flights on Bleriot 2-seater (70 h.p. Gnome motor) by arrangement.

Please address all enquiries to

**L. BLERIOT,** BELFAST CHAMBERS,  
56, Regent St., London, W.

Head Office for the British Empire. **NOBBERT CHEREAU,**  
General Manager.

## Expert Opinion

VALENTINE, the first  
Monoplane Pilot to pass for

THE

## SPECIAL CERTIFICATE

of the Royal Aero Club

USED A

## "BRISTOL" MILITARY MONOPLANE

of which he wires as follows:

"MACHINE BEHAVED  
MAGNIFICENTLY.  
IN MY OPINION  
FINEST CROSS-COUNTRY  
MONOPLANE  
YET PRODUCED.

THE AVERAGE SPEED WAS WELL  
OVER SIXTY MILES AN HOUR."

For full particulars write—

**The British & Colonial Aeroplane Co., Ltd.,**  
FILTON, BRISTOL.

# VALKYRIE MONOPLANES.

THREE TYPES.

40-80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES,

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

TUITION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

**THE AERONAUTICAL SYNDICATE, LTD.,**

ESTABLISHED MARCH, 1903

**COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.**

Telegrams—"AEROVALKY, LONDON"

Telephone—KINGSBURY 24.



## AIR CURRENTS.

## Our Aviators at Play.

From the *Daily Mail*.—"Mr. Moorhouse, the Huntingdon airman, had an exciting chase yesterday afternoon after a heron. While flying back from Cambridge, where he had lunched, he saw the bird and went in pursuit. For a long time the airman chased the heron round and about the aerodrome, dodging over treetops and swooping to the ground in the pursuit." (The italics are ours.)

If this sort of thing continues we may expect to read something after this style in the near future:—

"Mr. Hasty Gamble had a narrow escape yesterday on leaving the aviation banquet given in his honour at Fuddlecombe-in-the-Vale, where he was flying to his hangar when a large wasp or hornet (he is not quite certain which) suddenly flew across his line of flight. The intrepid airman immediately gave chase, and after five minutes' catch-as-catch-can made a double somersault and vol-pancaked on to the ferocious insect, which was neatly squashed beneath his front skid."

"Mr. Blubakon-Black, while returning from breakfast at the Waldorf-Astoria, saw a female parachutist in imminent danger of being swept out over the 'Herring-pond.' A strong wind which was blowing at the time made her descent somewhat erratic. However, with the help of his usual adroit steering, the aviator was able to keep just under her descending path, and eventually caught her neatly on his elevator, whence he restored her to her frenzied parents, who were waiting on the Statue of Liberty. It transpired later that the lady was an ardent follower of the Peter Pan school, which possibly accounts for her aerial ambitiousness."

"Mr. Musby-Krekt lived through one of the most exciting moments of his career last evening, when flying home from a Christmas party. Just as he was approaching his dwelling, a large mince-pie was hurled at him from a neighbouring hedge. Shocked at this apparent waste of valuable comestibles, Mr. Musby-Krekt hovered over the mince-pie, and succeeded in intercepting its fall about five feet from the ground, conveying it to his mouth by a swift turn of the propeller. He remarked afterwards that the incident gave him quite an appetite, in spite of an extensive tea taken a short while previously."

D. M. H.

Professor Penhaligon had an exciting chase yesterday after a "Camberwell Beauty" butterfly. The eminent scientist was exercising his R.I.P. monoplane near Barnes Common, when he saw the insect and went in pursuit. Time after time the Professor chased the butterfly up and down the Common, circling round hawthorn bushes and dodging pedestrians in the wake of his quarry. At last the monoplane gained upon the lepidopter, and the Professor, with the reckless daring of the true enthusiast, let go the controls and left the machine to stabilise itself, while, with a masterly sweep of the collapsible butterfly-net which he invariably carries in his vest pocket, he secured his well-earned prize.

Lieut. Waterman, R.N., was testing his new hydro-aeroplane, the "Mallard," in Splasham Harbour yesterday, when he noticed a porpoise close by, and immediately gave chase. Naturalists are aware that these creatures are of a playful disposition, and this one appeared to enter thoroughly into the spirit of the game, executing some wonderful turning movements, and sometimes leaping right into the air, while the swifter "Mallard" flew over and round it, or descended on and rose from the surface of the water. Lieut. Waterman subsequently expressed himself as delighted with the behaviour of his machine, which, we may add, the Admiralty have most generously permitted him to purchase and make use of entirely at his own expense.

A distressing fatality in the East is reported by the Teheran correspondent of the Bazaar and Mart Telegraph Company. His Imperial Majesty the Shah of Balunistan, who is a great admirer of Western customs, recently acquired a small dirigible, and has been in the habit of making frequent pleasure trips in it. Sailing over the Palace grounds recently the Shah observed one of the Imperial elephants taking a stroll, and promptly went in pursuit. Time after time the dirigible chased the elephant round and about the gardens, soaring over fountains and dodging palm trees, the most admirable grace and agility being displayed on both sides. Unfortunately, however, a rope had carelessly been left trailing over the edge of the car; the balloon came a little too near the ground, and the powerful animal, now thoroughly enraged, seized the rope and dragged it violently to earth. The scene which followed was too painful to describe in detail. His Majesty and his

attendant happily escaped, but only by abandoning the dirigible to the vengeance of the infuriated beast, and all too soon nothing remained but a pile of unrecognisable fragments.

The elephant, which is now awaiting execution, shows no signs of remorse; on the contrary, the recollection of his crime appears to cause him the liveliest satisfaction.

M. L. E.

## Life's Little Problems.

(With acknowledgments to the celebrated "Hard Cases.")

(i) A., flying from Truro to Plymouth, is blown out of his course by a strong east wind, and finds himself compelled to descend on a desolate portion of the Bodmin Moors, with no human habitation in sight, and his petrol supply exhausted. How is A. to proceed?

Answers adjudged incorrect:—

(a) Walk.

(b) A. should capture a sufficient number of moorland sheep (or ponies, if obtainable), harness them to the machine, and proceed by land.

Answer adjudged correct:—

A. should demonstrate the superiority of mind over matter by resuming his seat and concentrating the whole of his mental forces on the machine. If he wills it to fly with sufficient energy, it will fly, petrol or no petrol. Any failure to respond on the part of the aeroplane simply indicates that A. is not willing to try hard enough.

(c) B. is flying across country, when part of his wing-fabric becomes detached. He lands in safety, but finds himself without any means of repairing the imperfection, when Miss K., a lady spectator, to whom B. has not had the honour of an introduction, very kindly places at his disposal a supply of a particularly tenacious brand of American chewing gum. May B., with propriety, accept the offer?

Answers adjudged incorrect:—

(a) Yes, but he will be well advised to secure, at the same time, a written undertaking from Miss K. not to make the incident a ground for proceeding against him for breach of promise.

(b) If he regards the transaction strictly as a loan, B. should make a careful note of Miss K.'s name and address, and, immediately he is able to make the necessary repairs in a more orthodox manner, must return her property in as good condition as possible, together with a suitable quantity of British-made—and therefore superior—confectionery, to compensate for fair wear and tear.

(c) Miss K. is a forward mix.

[This sentiment is undoubtedly correct, but our correspondent makes no indication of the proper course for B. to adopt, and the Problems Editor regrets that he is therefore unable to award any marks for this answer.]

Answer adjudged correct:—

Certainly not. Gifts of such a personal and intimate character are only permissible between relatives or very old friends. If Miss K. cannot oblige him with the loan of a needle and thread, B.'s only correct course is to send to the nearest post office for a supply of stamp edging.

[Note that this, if possible, should be obtained from old stock. In the case of the new issues, as the *Daily Mail* has pointed out, the mulgrave is frequently of very inferior quality.]

(3) C., owing to circumstances over which he has no control, makes a somewhat demoralised descent which finally lands him at the bottom of a good-sized gravel-pit, with the chassis of his monoplane in splinters, both wing-tips damaged, and propeller not lost but gone before. Scaling the side of the gravel-pit with some difficulty, C. emerges to find himself confronted by an irate landed proprietor, who informs him that he "does not believe in aviation," and insists on the immediate departure of C. and his machine. What should C. do?

Answers adjudged incorrect:—

(a) C. should respond solely by a gesture of derision.

(b) Politely explain the impossibility of complying.

(c) Borrow a steam crane.

Answer adjudged correct:—

C. should immediately telephone to the Balloon Factory for the loan of a War Office dirigible, which, on its arrival, can easily haul out the remains of his machine by the aid of a stout rope and grapples, and waft them to the friendly shelter of the nearest aerodrome. This method of transit will be perfectly safe, because nowadays a military airship (unlike a naval one) only falls to pieces when it is meant to.

M. L. E.

### The First Superior Certificate. 8225

Congratulations to Mr. S. F. Cody, the first British aviator to win the new Superior Certificate instituted by the Royal Aero Club. Not only did Mr. Cody use his all-British Cody biplane, with its well-known 60-80 h.p. Green engine, but he deliberately made the tests much more difficult than the conditions demanded.

He went for the distance test on Monday, November 27th, taking with him Lieut. Wilfred Parke, R.N., as passenger. Captain Carden, R.E., the Royal Aero Club observer, gave Shrewton village, beyond Stonehenge, as the turning point. Owing to a westerly wind, the outward journey took 1h. 20m., and the actual flying time for the return journey was 47m., but a stop was made at the Bristol sheds at Lark-hill on the way back. The pilot and passenger together weighed about 24 stone, and the machine carried, besides, petrol for a three hours' run and 7 gallons of oil.

On Wednesday morning Mr. Cody started for the 1,000 feet height test. Just to make it more difficult, he took up with him, as passengers, Lieut. Parke and his own son, Frank Cody, the total weight of pilot and passengers being 38 stone. He also carried 9 gallons of petrol, and 4 gallons of lubricating oil. With this load he got up to something over 150 feet in a mile and a half without forcing the machine up in the least, and continued to climb until he had reached a height of 1,300 feet. At this height he shut off his engine completely, and did a straight *vol plané* for his own shed, landing within 100 yards of it. Just to make sure that there should be no argument as to whether the 100 yards was 100 yards or not, Mr. Cody went up a second time by himself to make sure of the 500 feet *vol plané* test. He climbed to 600 feet in 4½ minutes, and came down in 1½ minutes, the *vol plané* being perfectly straight, and covering a distance of about 1½ miles. His machine actually stopped 5 yards from the point marked as the stopping place. Surely after this nobody can say that British machines are inferior to foreign machines of approximately the same type.

On Wednesday, while Mr. Cody was finishing his tests, Mr. James Valentine started from Lark Hill alone on a Bristol military monoplane, and put up a very fine performance. In spite of some wind, his average speed for the 100 miles works out at just 60 miles per hour. He flew to Farnborough and back, and on his return journey met Captain Fulton, R.A., on a Bristol biplane, bent on the same errand. Turning off his course to greet him, he lost a little time, so the speed of the machine must be well over 60 m.p.h., which is decidedly good for a 50 h.p. two-seater. On his return to Lark Hill he went for the height test, but the barograph went wrong, and stuck at about 600 feet. However, to make quite sure, Mr. Valentine went on up to about 2,500 feet, so that a number of experienced people on the ground could vouch for his having exceeded 1,000 feet, with plenty to spare. His final glide, with the engine stopped, was nearer 1,000 feet than the necessary 500 feet, so he takes the first monoplane higher certificate.

Captain Fulton did his cross-country test the same day, but, as it was getting late, did not go for the height test.

### Our Only Dirigible.

On Wednesday, the 29th ult., H.M. Airship *Beta* made her reappearance. It is quite four months since she was out, and she has been thoroughly overhauled. She now has two four-bladed propellers instead of the two single ones, and her speed is estimated to be increased ten miles per hour. The morning was dead calm. The engine (which is a Green, four years old) was started in the shed, and ran quite satisfactorily. Lieut. C. M. Waterlow, R.E., had her towed out on to Cove Plateau by about 12 men. On the first trip the crew consisted of Lieut. Waterlow, pilot; S.-Sergt. Richardson, mechanic; and Second Corporal Scovell, passenger. She rose to about 200 feet, her engine was started, and she made steady headway, going towards Fleet and back, being up about a quarter of an hour. On her second trip, she took the Colonel of the East Lancashire Regiment as passenger for twenty minutes. On her third trip she took a captain of the same regiment, and he was delighted with his experience. Captain Broke-Smith piloted her on her fourth trip, steering her in various directions, passing near Fleet, and back over Laffan's Plain to Cove Plateau. It being about mid-day when she landed, she was taken back to her shed and bagged down during lunch. In the afternoon, the weather still being calm, she was brought out again. Piloted by Captain Broke-Smith, S.-Sergt. Richardson in charge of the engine, and Captain Massy as passenger, she went in a N.W. direction, rising to about 1,100 feet, this trip lasting nearly an hour. She finally landed about 3.30 p.m., and was towed back to her shed.



Lieut. Wilfred Parke, R.N., the first pilot of the Cody biplane, excepting its constructor.

### The Cody Biplane.

There has been for some time an idea that no one could fly the Cody biplane except Cody himself. That notion has now been exploded, for some remarkably good flying has been done on it by Lieut. Parke, R.N. On Friday last Mr. Parke made some straight flights to get used to the controls, and on Monday of this week, having got thoroughly used to the machine, he did several really notable flights. During the morning he was merely tuning up, and in the afternoon he set out for his first circuit. This covered a course of seven miles, at a height of 500 ft. After a short stop he went up again, and climbed steadily to 2,000 ft. in 12 minutes, which is believed to be about record, both for height and climbing speed, so far as Farnborough is concerned. Arrived at that height, he stayed there flying steadily for 45 minutes, only stopping because of the darkness. He came down in a spiral glide from 2,000 ft., with the engine completely stopped. Such a fine performance by a young pilot shows that the Cody machine is not so very tricky to handle, even granted that Mr. Parke is an unusually good flyer. It should also be remembered that this machine is the fastest biplane in this country, with the possible exception of the Air Battalion's Bréguet, which has a bigger engine than the 60 h.p. Green in the Cody machine.

### The British Height Record.

M. Salmet, chief instructor of the *Bélier* School at Hendon, beat the British record for altitude on November 20th, rising to a height of 9,000 feet. Carrying a sealed barograph, and climbing rapidly, he got to about 6,000 feet. Thereafter, however, the cold affected the carburation, and rising became more difficult. Directly he reached 9,000 feet he decided to descend, though under better conditions he could have done better. The previous record was 6,595 feet, by Mr. Armstrong Drexel at Lanark in August, 1910. Actually this record has been broken unofficially by Messrs. Morison, Hamel, and Moorhouse.

### Doings at Eastchurch.

On November 26th Mr. Travers, who is to instruct the Territorial Balloon Company in the art of flying, was out testing the new 70 h.p. Short biplane.

On the 27th ult. Mr. Frank McClean was out on the twin-engine machine with Mr. Alec. Ogilvie as passenger, and later Mr. Ogilvie again went up with Captain Gerrard. Lieut. Longmore put in some fine practice on the *Bélier*-type monoplane, which he now handles very skilfully, and in the afternoon Captain Payne, R.N., made a long cross-country tour in the Short triple-propeller, twin-engine machine, piloted by Captain Gerrard.



## The Week's Work.

## Monday, November 27th.

**BROOKLANDS.**—Chattaway on Deperdussin did first part of brevet tests in excellent style, but stopped owing to fog. Sabelli, Wilkins, and Baldwin also out on same machine. Kemp doing first circuits on Vickers, Harold Blackburn on Colossoplane, showing improved lift and speed.

Pizey doing test flight, with Lieut. Longcroft as passenger, latter taking lever. Captain Gordon, R.M.L.I., out for circuits on No. 65 Bristol. Pizey then up with Warren, latter in control. Later Fleming up on No. 29 Bristol, and then with Longcroft at lever for two circuits. Pizey then up with Garne, and Fleming with Warren. Gordon went for two figures of eight. Fleming again up with Longcroft. Gordon then went for certificate, and did first half in splendid style, taking his turns very steadily, and landing beautifully right on the mark. In afternoon Fleming up at 1,200 feet, testing air after storm. Pizey went, with Garne as passenger, up to 1,300 feet, in two circuits, coming down in spiral glide with Garne at lever. Pizey then, with Longcroft as passenger, up to 1,200 feet, starting final glide from over Weybridge station. Finally, Fleming giving landing practice to Garne and Warren.

Dukinfield Jones, after some flights on Flanders in fog, landed near fence at Byfleet end. Tried to jump fence and pancaked into road on other side, smashing chassis and one wing. Hard luck just when machine was going well, but expected to be out again in a fortnight.

**HENDON.**—Potet, Welburn, and Gordon Jones, of Blériot School, making straight lines, showing great improvement. Dessouter, Prenselli, Sacchi and Allen flying, and making great progress.

**FARNEBOROUGH.**—Cody flying all morning, tuning up. In afternoon to Shrewton and back with Lieut. Parke, R.N., as passenger, landing at Lark Hill on return journey. Weight of pilot and passenger 26 stone.

**THE PLAIN.**—Brisk day's work, 30 flights made, and five machines out at same time. Pixton up with Lieut. Porter and Borton—both making good progress—also taking Mr. Farnall Thurstan. Jullerot did trial flight, and then took Lieut. MacArthur twice. Lieut. Freeman did two solos well. Busted out with Lieuts. Borton and MacArthur, giving lessons in planing. Valentine, with Lieut. Reynolds, R.E., as passenger, up in military Bristol monoplane, and quite enthusiastic about it. Same two then tried new monoplane of same type, which Prier had just flown, and found it even faster than the others. They made large circuits at about 2,000 feet for about half an hour. Jullerot, Pixton, and Busted on biplanes, and Valentine and Prier on monoplanes, all up together. In afternoon, Lieut. Williamson took second part of certificate in fine style. Jullerot up to 1,200 feet on No. 66, afterwards taking Lieut. Porter, who was up with Pixton later. Valentine finished up proceedings with two fine flights on monoplane, taking Jullerot and his own mechanic successively.

## Tuesday, November 28th.

**BROOKLANDS.**—Chattaway on Deperdussin doing figures of eight, but too windy for certificate tests. Sabelli, Wilkins, and Baldwin doing straight. Kemp, on Vickers, doing circuits in good style, and says machine handles excellently. Blackburn on Colossoplane steadily improving.

Pizey, on Bristol, up with Longcroft. Fleming testing No. 65 Bristol; Gordon flying brilliantly in nasty wind. Fleming then up with Longcroft, and Pizey taking Garne and Warren. Fleming giving landing tuition to pupils. In evening Fleming testing No. 29. Pizey with Longcroft for long flight, latter showing great aptitude in control. Later Pizey took Captain Weeding, home on leave from Gibraltar, for his first flight. Both pilots then out with all pupils. Captain Gordon doing fine solos high up, for twelve and fifteen minutes.

**HENDON.**—Morris, Potet, Prenselli, and Dessouter, of Blériot School, out for practice.

**FLEY.**—Oxley and Scott were out on the Blackburn-Renault passenger machine, making one or two short flights; wind rather gusty, so no long flights were attempted.

**BRIGHTON-SHOREHAM.**—Lieut. J. C. Porte, R.N., on Deperdussin, made trip to Brighton and back at mid-day, and in afternoon took Mr. G. Hill, of Brighton, for circuits of aerodrome.

**THE PLAIN.**—Valentine, last to finish night before, first to start, taking up Lieut. Williamson for height test of military



G. Bentley Daere, of Bristol, one of our latest pilots.

monoplane, and afterwards solus. Pixton up with Lieut. Porter, and Jullerot with Lieut. MacArthur. Busted up solus. Wind of from 15 to 20 miles per hour all afternoon.

## Wednesday, November 29th.

**BROOKLANDS.**—A very busy day, machines out from dawn to dark. Pizey testing, with Longcroft as passenger, up to 1,500 feet in ten minutes, out over golf links, pupil doing all hand control work, and landing with spiral glide, making three circuits in doing so. At same time Gordon flying No. 65 at 500 to 800 feet magnificently. Pizey then up to 1,200 feet, with Garne, in under six minutes, and landing with S glide. Fleming then up to 2,000 feet, with Warren as passenger, both school machines climbing splendidly. Captain Gordon practising eights for brevet. Major Benwell, back again, doing circuits in good style, and landing particularly well. All pupils hard at work. In evening, Pizey and Fleming up at same time, with Nos. 29 and 65, to test climbing power of machines, No. 29 being the better. Major Benwell and Captain Gordon practising. Pizey with Longcroft, and Fleming with Warren, up to 1,000 feet, coming down with engines stopped, and then Pizey with Garne. Later on Major Benwell took second half of certificate, going up to 200 feet, being first field officer of Indian Army to take certificate. Captain Gordon also took second half of certificate, going up to 400 feet, and landing with perfect glide right up to mark. Day finished by Pizey going up as passenger with Captain Gordon. Ducrocq out across country.

Chattaway, Sabelli, Wilkins, and Baldwin out on Deperdussin all day. Chattaway, starting for second half of brevet, came down in sewage farm, but not a wire or bolt gave way. Machine simply hauled out and set to work again. Kemp doing excellent circuits on Vickers.

Reappearance of Martin-Handasyde, after last week's smash. Astounding alteration in form. Now flying as well as the finest machines in the world. With Sopwith as pilot and Handasyde as passenger, going with the grace of an Antoinette and steadiness of a Nieuport. Gliding angle extraordinary, and no kick or dip when engine switched off. Heartiest congratulations to Martin and Handasyde, who, after all their disappointments, have now produced what is absolutely one of the two or three very best machines in existence. Antoinette engine proving that, in capable hands, the stationary cylinder is more than the equal of the rotary. Machine might do with less dihedral, and better protection for pilot.

Early in afternoon Snowden-Smith off to Basingstoke. Got to Aldershot and found football in full swing, so came down

to see how things were going. Alighted on Queen's Parade, and not allowed to depart till next day.

Captain H. F. Wood, in early morning, out on Vickers. Got lost in fog. First attempt to land showed sewage farm below, next attempt disclosed sheds, and third the paddock, which gave bearings, so that he finally landed in middle of ground. The sort of experience that makes one wish for an open, unencumbered aerodrome.

Herbert Spencer also out with passengers, among them C. C. Turner, of *The Observer*.

HENDON.—Heavy fog in early morning. About 9.30 a.m. Valkyrie School pilot brought out school machine to test air. Made several circuits and busy day's tuition ensued. Buck first out, flying splendidly for twenty minutes. At same time Barber up on No. 10 to great height, and descended with fine glide. Miss Loraine then took passenger seat, and went for twenty-minute flight over surrounding country with Barber. Later Buck continued tuition and showed great progress; landings now excellent. Towards mid-day the wind became gusty; but Captain Loraine brought out Valkyrie racer and made several fine flights.

In afternoon Barber up, with Miss Franklin as passenger across country. Harrow reached at over 1,000 feet, and return journey made towards Wilsden and over *Welsh Harp*. Ridley-Prentice out on school machine, at 800 feet. Barber, returning from Harrow high up, passed over school machine, and descended with perfect spiral glide. Ridley-Prentice continued several more circuits, and terminated with dive, landing faultlessly. Chambers then for trial flights before going for certificate. Captain Loraine out on racer, and quickly rose to over 1,000 feet; staved there half an hour, flying over Hendon and Mill Hill. Spiral descent distinctly attractive. Chambers then made first test flight for brevet, Metford and Slack, of Blériot School, acting as observers. Quickly up to between 300 and 400 feet, and did six figure eights in excellent style. With darkness, ground fog got very thick, and Chambers postponed second test.

Fowler at Grahame-White School early, and, taking out school biplane, made steady straight flights for about 25 minutes; then handed over machine to Raphaëlle, who rolled for about 20 minutes getting more used to the controls. Fowler again mounted, making more straight flights with well-judged landings; another 20 minutes' rolling by Raphaëlle, and work was adjourned till afternoon. Fowler again out doing straights, and showing steady improvement. Then handed machine over to Gates, who practised straight flights until dark. During the remainder of week, owing to extremely unsettled weather, not much practice put in at school.

All Blériot pupils out practising practically all day. Hamel took up lady passenger on Blériot military machine for about an hour, at 3,000 to 4,000 ft.

Salmeston, on Circuit-type Blériot, took up sealed barograph with intention of beating British altitude record. Barograph registered over 9,000 ft., and showed that Salmeston attained 6,000 ft. very rapidly, but that from the last 3,000 ft. the rise was slower. Salmeston came down *en vol plané*, and felt quite all right after his experience. Barograph now in hands of Royal Aero Club being tested.

FARNBOROUGH.—S. F. Cody out in splendid style. Two passengers, Lieut. Parke, R.N., and Frank Cody, with him, to 1,300 feet, descending on Laffan's Plain with a splendid *vol plané*. Several more flights during the morning. Coming over Cove Plateau at 200 feet, he could be plainly seen standing up and leaning over Lieut. Parke, who was in the pilot's seat, instructing him in the controls of this machine, which was new to him.

About 12.15, Bristol monoplane seen coming from N.W. at a very high speed. Landed with fine *vol plané*, at very steep angle. Pilot turned out to be Valentine, from Salisbury Plain, going for superior brevet.

During lunch, Captain Fulton, R.A., also going for superior brevet, arrived from Salisbury Plain on Bristol biplane and stayed about an hour, starting back about 3 p.m., rising to tremendous height, taking the railway as a guide back to the Plain.

De Havilland, of Aircraft Factory, also out during afternoon on his own Farman type biplane, and made some flights.

FLEY.—Oxley, Weiss, Hunt, and Scott made several passenger flights on Renard-Bleekburn. In one flight Oxley up with pupil to 500 feet, made monoplane climbing very quickly. Wind gusty, making lengthy flights risky.

THE PLAIN.—Prior up with Jullerot on Military monoplane, getting fine speed out of her, after which Jullerot took Porter for last lessons; Pixton with Lieut. Borton for final instruc-



M. Salmeston, the holder of the British Height Record, on his Blériot.

tion. Lieut. Freeman made two solos, after which Valentine started at 11.26 for superior brevet. Borton then made first solo with conspicuous success. In afternoon, Valentine back at 1.29. Lieut. Porter made first solo. Lieut. Borton made two solos, improving each time. Lieut. MacArthur also made first solos; all three pupils showing remarkable efficiency. Jullerot took Valentine and his dog as passengers in biplane. Prior took up Jullerot for height test of the monoplane, Valentine doing same with Farnall Thurstan. Pixton made first appearance as monoplane pilot, doing very fine solo on military machine, finishing with perfect landing.

#### Thursday, November 30th.

BROOKLANDS.—Fleming out with Longcroft, and Warren giving tuition. Pizey, in evening, out with same pupils and Garne, and later with Lane, a new pupil. Fleming landing out in centre of ground, two mechanics out to assistance. On return all back by air, rising to 500 feet in one circuit, total weight 34 stone. Raynham, on Avro-Viale, now flying much better, up high outside track, and then doing spiral glides, switchbacks, and other fancy performances. Sippe, on same machine, flying very well, and practising for certificate. Colossoplane out, and steadily improving. Knight, once a biplane pilot, out for first time rolling on Vickers, and shaping very well. During afternoon, Cody, with Lieut. Parke, R.N., as passenger, arrived from Farnborough, and left again about ten minutes before lighting-up time.

FARNBOROUGH.—Lieut. Snowden-Smith started from Queen's Parade, Aldershot, but Gnome not pulling well. Changed defective plug for one lent by Cody, but engine still obstinate, so alighted without damage on rifle range, with bullets flying. Excellent imitation of the real thing. S. S. the first British military aviator to be under fire. Voluntary descent, and so much for daily papers' alarmist reports of "Awful Accident to Army Aviator." Cody very busy on Laffan's Plain, winding up by flying to Brooklands with Lieut. Parke, R.N., as passenger, and returning practically in dark.

HENDON.—Seamon made two flights of about 15 minutes' each, practising planing at end of each.

THE PLAIN.—Very gusty all day, and one six-minute solo by Jullerot total of day's flying.

#### Friday, December 1st.

BROOKLANDS.—Fleming out for trial in gusty wind. Then teaching Garne landing. Later with Garne in pilot's seat, taking complete change. Then out with Warren. In evening Pizey out, but wind too bad for pupils. Colossoplane out early, going strong. Sippe and Raynham flying well on Avro-Viale. Lieut. Beattie, R.E., once more returned to aviation.



out for rolling practice on Vickers. Lieut. Snowden-Smith's biplane brought back by road, owing to impossibility of getting leave for time to fly back.

FARNBOROUGH.—Cody, with Lieut. Parke, R.N., as passenger, flying off and on all afternoon, instructing in handling of new machine. Cody sees his machine flying for first time in three years of aviation. Machine piloted by Lieut. Parke, R.N., doing straight flights to get used to controls.

#### Saturday, December 2nd.

BROOKLANDS.—Bad day. Pizey attempted flight in morning, but wind far too bad. About 3.30 p.m. Gilmour brought out Martin-Handasyde for his first trip on her, and did two hair-raising circuits in wind varying in gusts from 8 m.p.h. straight up to 30 m.p.h. Most exciting performance, and showing to the full the stability of the machine and the wonderful skill of the pilot. Machine evidently much too fast to be flown in a bad wind in a small ground like Brooklands. Even the most hardened aviators went and hid their heads while Gilmour was jerked up and down 20 or 30 feet at a time by gusts. His landing was beautiful, and evidently the machine is very quick to answer her controls. No one else out. Baldwin, of Deperdussin School, who is a mining engineer, is shortly going to South Africa, and is taking a 35 h.p. Dep. with him. Will probably take the firm's agency for South Africa, and should find it a good asset as soon as flying catches on there.

#### Sunday, December 3rd.

BROOKLANDS.—Pizey out with new pupil, Captain Weeding, home on leave from Gibraltar; also with Longcroft, and with Miss Weeding and a friend. Pizey again with Captain Weeding, and then with his brother, Mr. Weeding, of Addleston, who also contemplates taking up the sport. Lieut. Longcroft doing solo straight, and Garne ditto. Flanning up with Captain Raleigh, another new pupil, and with "Warren."

Busy day. Kemp on *Pickers II.* going well up at 1,000 feet. Machine looks very handsome in air, and handles well. Lieut. Beattie, R.E., latest recruit to monoplane, doing good straight flights, and getting used to controls. Ducrocq on biplane flying well, as also Raynham on Avro-Vale. Spencer, on own-built biplane, carrying passengers in usual excellent style. Blondeau out on Blondeau-Hewlett school biplane. Hamel, with Miss Trehawke-Davis as passenger, arrived from Hendon on 70 h.p. Blériot, accompanied by Salmest on 50 h.p. Blériot single-seater. After short stay, all three back again, going very fast with the wind.

HENDON.—Barber out in afternoon on Valkyrie racer in his usual excellent style; no school work done.

Hamel took lady passenger on Blériot military machine from Hendon to Brooklands against strong wind. Salmest accompanied them on his single-seater Blériot. Time, 45 minutes going and 14 minutes coming back, this showing strength of wind.

FILEY.—Beautiful moonlight night, so Oxley had passenger Blackburn-Renault out at 1 a.m., making many passenger flights with pupils by moonlight. Night perfectly clear and flying quite as safe as during day. After a short rest, again out flying in the early hours of Monday morning. This machine has now done a considerable amount of work, and up to the present there has not been slightest hitch with Renault motor or any other part of machine.

BRIGHTON-SHOREHAM.—Morison, Radley, Gilmour, and Lieut. Porte arrived by car. Gilmour then out alone on Deperdussin two-seater, disporting himself along Brighton front till nearly dark, doing fancy turns and generally entertaining the populace between the Aquarium and the pier. A



Mr. J. A. Anderson snapped just after taking his certificate on the Birdling-Sommer.

fine performance and a good advertisement for aviation. Aerodrome beginning to look busy. Several new pupils have joined Chanter School since arrival here. Chanter monoplane of Newport type nearly finished. Collyer-England and Metzgar-Leno progressing favourably. All three should be out soon.

#### The Avro at Barrow.

The following notes on the behaviour of Commander Schwann's Avro biplane at Barrow-in-Furness are of unusual interest, as they chronicle the first accomplishment of a flight from the water in Great Britain. The sender says:—

"The machine left the water several times, just rising clear, so that Commander Masterman saw daylight under the floats. He computes the distance travelled to be 50 or 60 yards in these skips. Commander Schwann said that he felt the machine strike the water each time between the skips, but did not realise he was off the water during the skips. Then, owing either to giving up helm, or to a puff of wind (there was a wind of about 5 m.p.h. on the port bow) or to an extra pull of the engine, he suddenly rose steeply to about 15 or 20 feet off the water and lost his balance. Instead of putting the elevator down he warped and starboarded his helm, and threw the port wing down, and (more fatal still) stopped the engine. The whole cause of the descent was his inexperience in flying.

"Certainly, he was the first man to get off water in England. There is no doubt he did not simply get a skip-off from the waves, as the ripples were quite insignificant, and it is certain that the machine would get up in dead calm water.

Commander Schwann has offered full details of construction, etc., and working drawings of the floats to the Admiralty. In his next floats he is going to alter the method of attachment to the machine.

The floats were only slightly damaged in the accident, but the left lower plane was smashed up, so time is now needed for repairs.

Not only is this machine the first machine to get off the water in this country, but it must be remembered that the original Avro was the first machine to get off the land.

#### Poor Ireland!

The Irish Aero Club, which made a profit of £400 at the Leopardstown meeting last year, has now offered a £25 prize for competition. This is to go to the competitor who, on any one day between 8 a.m. and 4 p.m., shall, on an aeroplane made in Ireland, with the exception of the motor, propeller, magneto, wheels, and tyres, accomplish the greatest number of half-mile flights. The number of days upon which flights are made, or attempted, by each entrant to be limited to three. The competition shall take place in Ireland between November 20th and December 20th, 1911, over ground uninhabited and on which there are no members of the public, and shall be under the observation of representatives of the club.

Notice of dates selected by competitors for flights must be given in writing to the club secretary one week previous to such selected dates. No prize will be awarded unless at least two competitors start.

An entry fee of £5 will be required from each entrant when lodging his entry form, and this will be returned when such competitor has arrived with his machine on the ground in a position to fly, and has, in the opinion of the committee, made a bona-fide attempt at flight.

Evidently the I. Ae. C. means to keep its money. But it scarcely seems to be the best way to encourage aviation in Ireland. £25 would scarcely pay for carting the machine to the "ground uninhabited, and on which there are no members of the public."



Valentine on his Deperdussin doing a glide into the Eastchurch Aerodrome.

### The Royal Aero Club.

The annual dinner will take place at the Royal Automobile Club, Pall Mall, S.W. (by kind permission), on Thursday, December 14th, 1911, at 7.30 for 8 o'clock.

In order to facilitate the arrangements, members are requested to notify the Secretary, as early as possible, if it is their intention to be present. Members may be accompanied by ladies. Tickets (inclusive of wines, cigars, etc.): Gentlemen, £1 5s.; ladies, £1 1s.

At the Committee meeting on November 28th, the following new members were elected: Captain Robert Anstruther Bradley, Richard T. Gates, and Captain Godfrey Paine, R.N., M.V.O.

The following aviators' certificates were granted: 160, Lieut. H. A. Williamson, R.N. (Bristol biplane, Salisbury); 161, Robert Smith-Barry (Bristol biplane, Salisbury); 162, George Bentley Dacre (Bristol biplane, Salisbury); 163, Lieut. John Graham Bower, R.N. (Bristol biplane, Salisbury); 164, James Arthur Anderson (Sommer biplane, Brooklands).

**Observers for Aviators' Certificates.**—The following resolution was passed:—

"That in future no aviators' certificates shall be granted by the Committee unless the observers are independent and disinterested persons."

**Applications for Aviators' Certificates.**—The Committee decided that in future, unless the application form for an aviator's certificate is received by the Club before the tests have been carried out by the candidate, the certificates of such tests shall not be accepted by the Committee.

**Certificate of Performance.**—The Committee decided to issue Certificates of Performance for particular performances of machines. The conditions under which such certificates will be granted will be announced at a later date.

HAROLD E. PERRIN, Secretary.

### Italian Notes.

The war in Tripoli has converted the scoffers, silenced the ignorant, and been a better eye-opener than a gross of meetings.

Cagno has returned to his Farman, and left last week, with a dozen other volunteer aviators, for the war, as sub-lieutenants. Deperdussin, Blériot, Farmans, an Astéria, and the Antoni monopolise the machines taken out by these volunteers. The latter, a successful novelty, which recently raced the Royal train for several miles, and of which I wrote elsewhere a year ago, has been delayed by a slight *panne* on the eve of departure. At first glance the wings of this machine appear to have been fitted upside down, the camber being on the upper surface, but when in flight their extreme flexibility causes this effect to be almost absent. The inventor claims natural stability and the impossibility of any accidental dive or slip, and certainly its performances have been such as to warrant the Government (who took considerable practical interest in its first trial) accepting the machine.

The dirigibles P. 2 and P. 3 have been embarked for Tripoli, and report says that Cattaneo has volunteered, been accepted, and sailed from South America.

At home, the Ueselli dirigible made a good flight from Turin to Milan, against the wind, a few days ago. I was most struck by its easy manoeuvring among the pinnacles of Milan Cathedral. This is the second "lighter-than-air" to be engine by the Spa Company, Piccoli having fitted it last year, with success.

Unfortunately, the Chiribiri school has had a sad fatality—Croce was the first and, I hope, their last. T. S. HARVEY.

### Autogenetic Authority.

In connection with the agitation in favour of British aeroplanes, a touch of humour has been lent to the situation by the sudden "butting in" of the Aerial League. Many people have been under the impression of late that this much-promising body had fallen into a state of innocuous desuetude. At any rate, like the late Sir W. S. Gilbert's House of Lords, it has "done nothing in particular, and done it very well."

However, after the meeting of constructors had been duly held at the Royal Aero Club, and after arrangements had been made for a deputation to wait on Colonel Seely, to explain the situation through the mouths of men who know what they are talking about, the Aerial League apparently woke up suddenly and realised that its rôle of patriotism-propagator had been usurped by a self-appointed committee of men who were so injudicious, or so reckless, as to be financially interested in aeroplanes.

The result was that a deputation from the Aerial League, whose names have apparently not transpired, was introduced to Colonel Seely by a Member of Parliament named B. S. Straus, doubtless a patriotic gentleman of ancient Anglo-Saxon descent.

Knowing but little of the prominent individuals of the Aerial League, but having some slight knowledge of what they have actually accomplished in connection with aviation, one is not altogether surprised to find that the deputation in question, as reported in a letter from this Mr. Straus, which appeared in *The Westminster Gazette* last week, strongly supported the Government attitude of giving a big prize for an open competition, pointing out that "The League desired that the Government should acquire the very best machine the world could produce, and consequently supported the principle that the main competition should be open to the whole world." It is eminently satisfactory to note that, as a kind of afterthought, it was added "at the same time generous support should be given to home industries."

Incidentally, in his letter Mr. Straus states that the Aerial League of the British Empire is "the only representative authority interested in aeronautics that has no trade interest or ulterior motive to serve, the only motive of the League being patriotism." It would be interesting, by the way, to know exactly what claim the Aerial League of the British Empire has to call itself a "representative authority." To repeat a somewhat historic question, "By what authority does thou these things, and who gave thee this authority?" It would be interesting to know how many members this "Aerial League" possesses to-day who have paid their subscriptions, and so can be claimed as bona-fide members. If the Secretary would oblige with the figures, one would be better able to judge the merits of the "League's" claim to be either "representative" or an "authority."

### French Military Aviation.

M. Clementel, the Financial Secretary to the French War Office, in issuing his report on military aviation, says: "The purchase of aeroplanes from private constructors will be surrounded by full necessary guarantees (i.e., as to ability to construct in quality and quantity to the desired standard). The State has still no ambition to become a constructor of aeroplanes."

"Several officers have, during 1911, passed through the Higher School of Aeronautics, and others will be sent there during 1912, and thus a tendency is manifest to recruit, gradually, a staff of technicians capable of doing good service in the construction of aeroplanes. A staff of State mechanics is being organised at various centres of aviation to undertake repair work, for repairs play an unforeseen part in the budget of aviation."

"In April of this year the first grouped flights of officer aviators took place, and in June and July genuine aerial manoeuvres, covering 1,000 kilometres, were undertaken, in which twenty aviators, by a prearranged scheme, explored methodically the frontier from Calais to Mezières, and afterwards, hypothesising a siege of Paris, reconnoitred the lines of the Somme and the Valley of the Oise."

[M. Clementel cautiously omits to mention all the work along the German frontier, which annoyed Germany so much and helped to make the Germans more respectful.—Ed.]

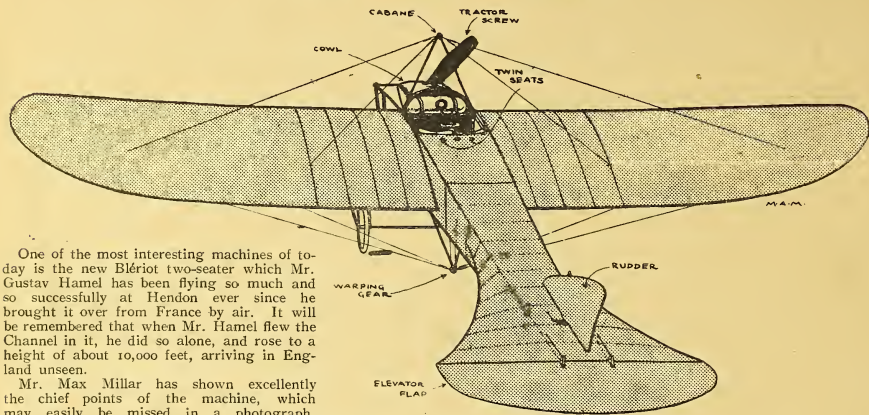
"In July and August, at Sissonne and at Chalons, the artillery of the Second Army Corps started a series of tests to find the value of attaching aeroplanes to artillery to act as range-finders, and to signal the result of gun-fire on invisible objects, or objects difficult to discover. Similar experiments were made with siege artillery at Chalons and Verdun, and were followed with keen interest by a number of general officers."

"There were also the autumn manoeuvres of the Sixth and Seventh Army Corps, in which the 'fourth arm' showed the progress it has made."

In these manoeuvres 47 military aviators took part, and eight officers were attached as regular observer-passengers. Twenty of the aviators were well-known civil aviators, called up as reservists and subject to ordinary military discipline. The only serious accident was the death of de Niport, who was not killed while employed on useful work, but threw away his life through flying in a bad wind, while tired after a big cross-country journey, to satisfy the curiosity of a singularly out-of-date French General. The above notes contrast strangely with the record of our British military aviation.

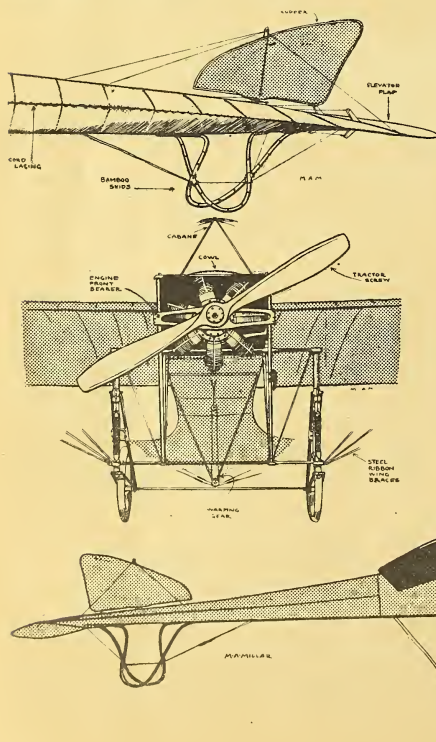


## The Blériot Two-Seater.



One of the most interesting machines of to-day is the new Blériot two-seater which Mr. Gustav Hamel has been flying so much and so successfully at Hendon ever since he brought it over from France by air. It will be remembered that when Mr. Hamel flew the Channel in it, he did so alone, and rose to a height of about 10,000 feet, arriving in England unseen.

Mr. Max Millar has shown excellently the chief points of the machine, which may easily be missed in a photograph.



Blériots with fish-tail fuselages have been seen in this country before, as, for example, the two-seater belonging to the late Lieut. Cammell, R.E., Mr. Hamel's Gordon-Bennett racer, and the older two-seater at Hendon, but all these differ in one way or other from this latest type.

The philosophy of the fish-tail is that, owing to its slight depth, and owing to its being approximately of a streamline form laterally, it offers very little side resistance to gusts, and, when turning, the rudder has not to overcome the same damping effect as if the sides were flat. This argument seems to be borne out in fact, for these machines are noticeably quicker in answering the rudder than are machines with entirely enclosed fuselages or with fixed fins just in front of the rudder. Mr. Hamel tells me that this machine, in particular, handles very easily, and is, in fact, as easy to fly as is the single-seater.

This latest machine, fitted with a 70 h.p. engine, is, although a two-seater, remarkably fast. On several occasions it has been tested against the 50 h.p. single-seaters of the latest type, such as that on which M. Salmet recently broke the British height record, and it has always beaten them on a straight run.

It will be noticed that the head resistance of the machine has been materially decreased by reducing the amount of the chassis. The upper cross-member, or *planche*, now runs across level with the bottom of the fuselage instead of the top, thus reducing the length of all the vertical members by

exactly the depth of the fuselage. At the same time, by altering leverages somewhat, and strengthening the rubber shock-absorbers, the same amount of play is allowed to the wheels, which retain the Blériot characteristic of being able to take up the shock of a very bad landing without coming up against anything solid, and breaking something.

The cowl which covers the engine and tanks has been

improved in design, so decreasing head resistance still further, and at the same time protecting the pilot and passenger from wind and oil, so that it is quite possible to go up ordinarily clad and come down warm and clean.

The control wires to elevator and rudder are carried inside the fuselage, and only emerge close to their point of operation, making a neater and cleaner job and protecting the wire from the weather for almost its whole length. The old tubular arrangement, or pylon, underneath the fuselage, which carried the warp wires, has been replaced by two streamline tubes.

Altogether the machine is a fine example of up-to-date practice in design, and is well worth inspection.

C. G. G.

## A VISIT TO THE AVRO WORKS.

By "A MERE WOMAN."

I naturally expected the Avro Works at Manchester to be a factory, instead of which I found them located in a baronial castle. There are frowning, blackened turrets, towers, and bastions, spiral stone staircases, dungeons and a moat. The portullis and drawbridge have been removed, but there was a seneschal, family retainers, and a dog; and I feel convinced that somewhere upon the premises they secrete a man-at-arms with an arquebuse. In the courtyard of the castle, at the foot of the keep, I saw three rough wooden coffins. They were rather above the ordinary size. Two were long and narrow, suitable for giants Chang or O'Brian; the other was about the proportions that Daniel Lambert would have needed. They were not really coffins, of course, but light packing-cases—most innocent-looking boxes that even the most rabid railway company would be kind to; and yet, when the lids were lifted, I saw with amazement that within their narrow bounds they held a complete Avroplane, folded down, and packed in the neatest manner imaginable. Verily, no biplane in existence can compress itself into smaller space.

Half-way up the eastern turret, in his comfortable office, sat Mr. H. V. Roe reading (of course) the current *AVROPLANE*. After a little enthusiastic discussion on the merits of that machless periodical, he favoured me with a brief *résumé* of the recent work of the firm. He enumerated some of the well-known triumphs of the Avroplane, and pointed out that over three-quarters of the prize-winning flying at Brooklands this summer was accomplished by Roe pupils—not all on Roe machines, but by men trained in the Roe school. Pixton, Raynham, Kemp, and Noel: these are names to conjure with. Next he showed me pictures of the work at Barrow-in-Furness, where Commander Schwann and Lieut. Boothby are experimenting with an Avroplane (the one that Pixton flew to Brighton) fitted with floats to rise from the water. These officers are experiencing the usual difficulties of the pioneer, but ultimate success is assured, and there is little doubt that Lieut. Boothby will attain his great desire—the winning of his "ticket" on an aeroplane that has lifted itself from the surface of the water.

Then, rising, Mr. Roe conducted me to a large and lofty chamber (the banqueting hall of the castle I think it must have been)—an animated scene where, at bench and vice and table, many busy workmen were engaged in every variety of task that belongs to aeroplane construction. But that which immediately caught my eye was a huge and wondrous bird standing at one end of the room: an object of most graceful curves and striking appearance—the very last word in Avroplanes, the new 1912 model.

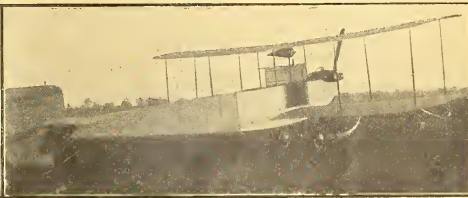
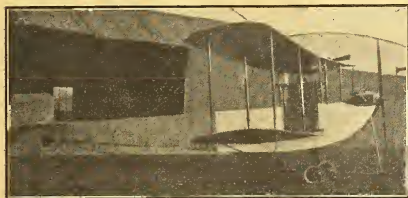
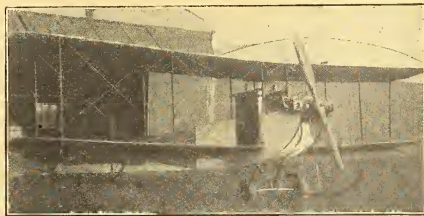
The new Roe machine is a wonderful advance upon its predecessors. The entirely covered-in fuselage, following careful stream-line form, now assumes the exact sweeping outline of a bird's body. The well-developed "crop" is of aluminium sheathing, with a great depth of flank to prevent "side-slip."

Every line is carefully thought out, every detail smoothed down, and, as a result, the head resistance is cut down to a mere nothing. The feet of the graceful bird are represented by two small and extremely plump pneumatic wheels—at least, that is the hopeless way the Mere Woman phrased it, but Mr. Parrott, chief of the staff, worded it a little better. "The machine," he said, "is mounted on a cross laminated spring fitted with two small wheels with metal discs, as on the 1906 pattern. This spring is attached to the fuselage by short steel struts, which also carry a single centre skid, which is hinged in the centre. A certain amount of movement is allowed at the nose of the skid by a stout compressed spring fitted to a strut mounted under the engine."

The passenger's seat is in front of the pilot, between him and the engine; and when I saw the provision made for that passenger I could immediately have told, even if I had not already known, that Mr. A. V. Roe is now a married man! The Avroplane is the machine, par excellence, for carrying a lady, for the feminine idiosyncracies are so carefully studied. The seat is placed deep down in the body of the machine, so that only the head appears over the covered-in fuselage. This means that toes and hands are cosily sheltered, and feminine skirts not disarranged. Moreover, the two radiators are erected on each side of the passenger's head; thereby not only warming her, but keeping her hair and hat tidy and allowing of a quite becoming headgear. Was anything ever more kindly and thoughtfully planned? The aviator's head also only just rises clear above the carefully-padded rim of the elliptical opening in the fuselage; and it must be a great comfort to him, also, that all his controls are well down inside and sheltered.

The framework of the cross-shaped empennage is all of steel, and the wires are all inside. The drum-like fabric of the rudder and elevator is of English material treated with Emallite. The rudder-mast forms also the support of the rear skid. By the knocking out of a couple of pins the rudder is instantly detachable, the elevator the same, the fuselage comes in halves in the middle, and the great planes come into convenient pieces, which are, moreover, interchangeable in case of a smash. The planes are of 4 ft. 6 in. chord and 34 ft. span, and the engine of this particular machine is a 40 h.p. Alavston. This splendid craft, I was told, is bound for Australia after trial at Huntingdon, but it is to be the future standard. The 1912 Avroplane has a great future before it without doubt.

I was shown, in another corner of the room, the careful and beautiful fitting together of the framework of the planes; the ribs all of poplar, the spars of English ash, the curving outside edges of the wing-tips of bent rattan cane. I saw the making of the efficient and yet inexpensive Roe propellers, cut out all in a piece of Kauri pine. I was likewise given an exhibition of the wonderful process of the oxy-acetylene



Side, three-quarter, and front views of the Avro-Alavston-Duigan biplane now at Huntingdon.



welding of steel plates, and shown how no amount of hammering will make the welded plate break at the joint.

Then Mr. Roe led me to other chambers of the fortress. I saw another huge room where the planes of different machines were being put together. I was taken down to the erstwhile baronial kitchen where a party of girls were covering the framework of the planes with material. I was shown a great dungeon occupied mainly by a big horizontal boiler, and great piles of ash and poplar planks, as also the huge steam pipe whereby the wood is steamed and bent as required. All this and much more I saw in that busy hive, and I came away with the feeling England need not lag behind.

#### Technical Instruction in Dublin.

An aviation course is now in full swing at the Bolton Street Technical Schools, and students should turn out some very successful models in a few weeks' time. The workshop is fitted up with good benches and a fine equipment of tools, materials, etc. Theory and practice run concurrently as much as possible, and students are induced to take an intelligent interest in their work. The director and committee are really to be praised for their go-ahead policy.

**SYLLABUS OF COURSE.**—The course extends for twenty-eight weeks, Monday, Wednesday and Friday (7.30 to 9.30 p.m.). Lectures every Monday night. Practical work Wednesday and Friday of each week. Theoretical lectures will be delivered under the following headings, illustrated, when possible, by blackboard sketches, photographs, etc.: Component parts and technical terms; Plan forms and types; Theory of flight; Ornithopters and helicopters; Kites and gliders; Propellers, types, manufacture, etc.; Types of chassis, running, landing, suspension, etc.; The Plane, construction, types, etc.; Aeroplane controls; Fuselages, types, construction, etc.; Stability of aeroplanes, natural, induced, automatic; Hydroplanes and hydro-aeroplanes; The internal combustion engine; Aero motors, past, present, and future; Aspects of aviation; The balloon; The dirigible; History of flight; Nature's methods of flight, animal, insect, seed, fish; Bird flight; Mechanical data, classification, mathematics. Future of aviation, and other subjects.

**Practical Work.**—The use and care of tools; practical wood-working; practical metal working; practical wood-finishing, varnishing, polishing; paper gliders; built-up gliders; kites; propeller making; propeller testing; and template making.

**Models.**—Single, scale types; two screw types; models to rise from ground; scale models; exhibition models; experimental work; practical flying of models and kites.

The instructor is Mr. R. W. Taylor.

#### Steel Tube "Par Excellence."

Now that steel tubing is entering so largely into the construction of aeroplanes, and as its use is likely to increase very considerably in the future, it may be well for constructors to know of a thoroughly reliable firm from whom they can draw their supplies. In some seventeen years' experience of cycle and motor work, the writer has never found better tubing than that turned out by Accles and Pollock, Ltd., of Oldbury. Their cycle tubing is of exceedingly high quality, but from the aeroplane constructor's point of view the firm is particularly noteworthy, because of the number of special sections and gauges of tubes turned out, and also because the firm is always prepared to make special sections at quite reasonable prices. One of the most awkward tube jobs ever tackled was the production of the steel tubular ribs used by Lieut. Seddon, R.N., in the construction of his experimental aeroplane. These were turned out absolutely faultlessly by Accles and Pollock, although the gauge was exceedingly light. Mr. Alfred Hackett, who was the constructional engineer for Mr. Seddon, has recently joined the staff of Accles and Pollock in the capacity of draughtsman, and will pay particular attention to the production of work which is out of the ordinary run. The firm has recently laid down a special department to deal with light steel press-work, such as special angle steels and lugs, and the writer is prepared to vouch for the fact that the work turned out in that department is fully up to the quality of the firm's well-known tubing. The firm has had unsurpassed experience in the production of particularly high grade nickel steel tube of a quality which is hardly used at all for cycle purposes, and altogether its products are sufficient guarantee that aeroplane constructors will receive exceptional advantages from them.

#### "The Avro" School.

In looking through the prize list during the season at Brooklands, one is struck by the number of "Avro" pupils

included in the list, for they have carried off sixteen out of the twenty-four prizes. C. H. Pixton, C. R. Kemp, L. Noel, and W. Raynham have all graduated from this well-known school, which says a great deal for the very thorough instruction and experience secured.

Pupils have been insured against breakages for £30, but as breakages do not often occur, most of the pupils have saved money by taking the risk themselves; in fact, it is never a serious matter, owing to the cleverness shown in design, in that the machines are built in sections, so that damages may be localised and only the broken portion replaced. To meet the offer of the Government, Messrs. A. V. Roe and Co. have reduced their insurance fee to £25, of which £10 is returnable if no damage is done. Tuition still remains at £50.

#### Rotary Engine Repairs in England.

In an earlier issue of THE AEROPLANE particulars were given of repairs to a Gnome engine which had been badly damaged. The injuries and repairs effected were as follows:—

(a) All seven cylinders were bent more or less oval, and were successfully trued up. (b) The radiating fins, many of which were flattened, have been straightened out. (c) Three new pistons have been made to replace three broken ones. (d) The back plate, nose, crank shaft, and connecting rods, which were all badly bent, were also trued. (e) Complete new sets of exhaust valves, springs, housings, rockers, and pull rods have been made to replace those hopelessly damaged.

Messrs. Hesse, Savory and Braham, who carried out this work in about three weeks, are to be heartily congratulated on the work, necessitating as it did a careful research into the exact qualities of metal used in the damaged and broken parts, before the actual repairs and replacements could be carried out.

The engine has now been running perfectly for some months, so that it seems that at last it will be possible to have rotary engine repairs carried out without waste of time, and for considerably less money than is usually charged by the manufacturers. As a matter of fact, the repair bill was between £50 and £60, whereas the quotation from the makers was close on £100.

No more delicate job could be given to a repairer than this, and its success is proof positive that any ordinary repair would be more than adequately handled.

#### The Latest Anzani Test.

The new three-cylinder Y type radial Anzani was put through its tests by the French Automobile Club on November 29th, and did two runs of five hours each. The official instruments showed it to be developing 35 h.p. at 1,418 r.p.m., and 28 h.p. at 1,143 r.p.m. This engine is really half of the successful 50-h.p. six-cylinder radial Anzani, the pistons, cylinders, etc., being interchangeable with those of the bigger engine. The cylinders are *désaxés*, and placed at 120 deg. to one another. The combustion chambers are hemispherical. As in the "military" three-cylinder engine, the inlet pipe from the carburettor is cast into the crank case, giving a very short distance for the gas to travel. Some idea of the improvements in the engine may be gathered from the fact that, whereas the old "Cross-Channel" type gave about 25 h.p. and weighed 73 kilograms, this new type gives 35 h.p. and weighs 55 kilograms. The average speed through the first test was 1,285 r.p.m., the engine developing officially 32.8 h.p. with a consumption of 49.1 kilograms of petrol and 19.3 kilograms of oil. During the second test the engine averaged 1,312 r.p.m., and developed 34 h.p. The General Aviation Contractors, Ltd., who handle this engine in England, should do well with it, as it is by no means expensive, and quite powerful enough for a well-designed single-seater machine.

#### Progress at the "Bristol" School.

During the month of November the weather was exceptionally unfavourable for flying, but no fewer than ten Bristol pupils passed for their aviators' certificates. So far as is known at the time of going to press, this is a larger number than have qualified at all other English schools combined during the month.

#### A New Model Firm.

Mr. M. L. Rolfe, of Chilton Grove, Endbury, Suffolk, sends an interesting catalogue of aero-models and accessories. The models range from 4s. upwards, and are guaranteed to fly from 100 yards and upwards, according to price. The various accessories are moderate in price, and a useful stock is carried.

## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

### Orientation.

SIR,—A very useful, though little known, fact is that if the hour hand of a watch be pointed to the sun, then the line passing through the centre of the watch-face and the mid-point of the arc between 12 o'clock and the point of the hour hand lies North and South. Which is North and which is South can easily be found from the sun's position, or from the interesting fact (?) in your Air Currents recently concerning the habits of English railways.

This may be of interest (if not already known) in view of the twelfth question in the first set of Questions for Pilots.

Glasgow.

ANDREW FORSON.

### A Weird Experience.

SIR,—While in Switzerland this year I was a witness of rather a remarkable accident.

It was at Lausanne (a three days' meeting), and Taddeoli, on his Morane, was unable to fly on Saturday and until six o'clock on the Sunday, owing to some obscure motor trouble.

However, on the Monday he got the motor going, and it seemed to run normally. At his third flight (he was flying splendidly at the time) the machine dived, turned three complete somersaults, and came to earth with a smash. The aviator was jerked out of his seat at each turn, and once was pitched right on to the wings, his boots going right through the fabric (the remains of the wings, showing the marks of the boots, were afterward exhibited at the Geneva Exhibition).

The machine fell from 400-500 feet. Ten minutes later, amidst great enthusiasm, the aviator drove up to the aerodrome in a car, absolutely unhurt from his adventure, except that his ears were bleeding.

Wishing THE AEROPLANE every success.

Bristol.

H. CALVERT FISHER.

### "Aviation as a Profession."

SIR,—Re "George Harrison's" letter on the above subject, I think Mr. Harrison is right as regards the first part of the letter, but in the latter end is suffering from a delusion. To enter the profession through the higher channel, the would-be aviator must have about £80 for fees and at least a couple of hundred pounds as capital, whether he flies for himself or for a firm.

The latter part about the mechanics not being able to find jobs is a myth; any capable, energetic, and practical mechanic, with experience, can easily obtain a good position in any aviation firm. There is a great demand for men who have the trade at their fingers' ends and are not merely automatic machines.

Mr. Harrison complains that he cannot get a job as help to an aviator. I don't wonder at it! Aviators want practical men, not simply theorists. He says that, although he has studied THE AEROPLANE and other books, he has not yet seen an aeroplane, and how can he expect to fly one?

Mr. Harrison would do well to take up the International Correspondence School's course in practical aviation. It will not cost him much, and can be studied in his spare time. The diploma if he passes will be worth a good deal to him when he starts out as an aviator.

Richmond, S.W.

JEREMIAH JENKINS.

### The Last About Freak Models.

SIR,—Mr. R. R. Drake's letter is again characterised by the courtesy and lack of jealousy which appear to be two of his leading attributes. The propellers employed on the standard "Mann" model have a combined pitch of 34 inches, of which, deducting 7 inches for the 20 per cent. slip, 27 inches is effective. As I explained to Mr. R. R. Drake in a previous letter, the thousand propeller-revolutions obtainable on a "Mann" monoplane afford it a normal flight of 750 yards, which is not so far from the half-mile after all! Given a slight favouring

breeze, the "Mann" monoplane can reel off half-miles with the same facility that Mr. R. R. Drake reels off "terminological inexactitudes," that is to say, with comparative ease. I have never claimed that the "Mann" monoplane can fly half a mile in an absolute calm, but I have no hesitation in asserting that, under all circumstances, it can fly further and longer than any "projectile," "freak," "dart," or "flying stick" which Mr. R. R. Drake—or, incidentally, any other of the "really big men"—is capable of designing.

I must congratulate Mr. R. R. Drake on his accurate (?) knowledge of the dimensions of the forthcoming full-sized "Mann" monoplane. His data—span 20 ft., chord 5 ft., camber 9 ins., propeller revolutions 750 per minute—are all guesses pure and simple, and, like all the other guesses which have characterised Mr. R. R. Drake's letters, they fall a long way short of the truth. Even his remarks about the "pitch" are inaccurate, in view of the reduction of blade area to which I referred.

With regard to Mr. R. R. Drake's question, "Have Messrs. Mann and Grimmer hopelessly outclassed all our cleverest designers of fast and efficient full-size machines, or is the 'Mann' model a 'freak'?" I can only recommend him to wait and see. All that I will venture to say is that the "Mann" full-sized monoplane will be of an absolutely original design, and that its flight velocity—although not in the neighbourhood of four miles per minute—will compare favourably with that of any machine of the present day. But it will be no more of a "projectile" than the Nieuport and Deperdussin, though possessing infinitely greater stability.

Finally, as regards Mr. R. R. Drake, nothing will please me better than to see his machine in flight in the course of next season's competitions, as I am extremely anxious to learn whether he belongs to the long-fuselage, huge-propeller, or gigantic-power school, from which three classes the opponents of efficiency are chiefly drawn.

And now, in conclusion, as this will be my last letter on this subject (*vide* the Editor of THE AEROPLANE), I would make a few remarks to readers in general. The controversy was initiated with the object of securing a revision of the rules governing model aeroplane competitions, with the view of making the aero-model of greater practical utility to full-sized practice by the penalising of machines of the "projectile," "dart," and "flying-stick" category. At the present time and under the present competition rules, makers of scientific and symmetrical models are greatly handicapped, and only a machine of the utmost efficiency can hope to hold its own against the multitude of "freaks" that appear at any average model aeroplane competition.

It was obvious that in a discussion of this kind the "Mann" monoplane would be bitterly attacked by those who were jealous of its world's records, and the letters of "Roy," "Piffel-fleiger," Rolfe, Drake, and "Mancunian" all bear eloquent witness as to the warped arguments of the enemies of efficiency and scientific design. On the other hand, the "Mann" monoplane has found two warm defenders in "A Mannite" and Mr. E. R. Brown, who are to be congratulated on their rational views on the subject of efficiency versus "cramming on power." I think it may be safely assumed that the "Mann" monoplane has not lost one iota of prestige in this controversy, which has partly achieved its end in drawing public attention to the subject of "freak" models. What remains to be done is to bring about some radical revision of the rules governing model contests, so that, by the exclusion of "freak" machines and pot-hunting competitors, the aero-model may once more play a great part in the development of that epoch-making science which we all hold so dear.

Surbiton.

ROBERT P. GRIMMER.

[It is to be noted that all through this argument no one has said anything about what the rules for reasonable models ought to be. If some of the debaters will forget about abusing one another's models and will offer some suggestions for sensible rules, they may do some good, for at present model competitions are simply a farce, from the point of view of anyone who takes an interest in real flying machines.—Ed.]

SIR,—In his scheme for a full-sized "Mann" monoplane in your issue of November 30th, Mr. R. R. Drake makes a "howler" which would make even "Mr. Grimmer's associates," as "Piffel-fleiger" disdainfully calls them, blush for shame. Whoever heard of calculating the speed of a full-sized machine by multiplying the speed of a model by the scale to which it is built! Working on this principle, an inch-to-the-foot scale model of, say, a Wright would fly at a speed of  $40 \div 12 = 3\frac{1}{3}$  m.p.h.!



I should have thought that a practical model-flyer like Mr. R. R. Drake would have known that the speed of a full-sized machine is proportional to the square root of the scale. Thus, a full-size "Mann" machine, 20 ft. span, would travel at a speed of  $18 \times \sqrt{12} = 63$  m.p.h. approximately. Mr. Drake, however, evidently thinks it is usual to decide on the propellers first and to construct the aeroplane to fit them. Personally, I always thought that aeroplane constructors built the propellers to suit the machine, but perhaps all present-day aeroplanes are "freaks."

The climax of Mr. Drake's letter is reached when he promises to show us what model flying really is in next season's competitions. But why, might I ask, should these marvellous models of Mr. Drake's be compelled to lie dormant during the winter? Why does not Mr. Drake "make hay while the sun shines," and relieve the "badly-designed" Mann monoplane of its ill-gotten records, as Mr. Drake seems to regard them? One might be forgiven for supposing, from his letter, that the "Drake" model is designed on the "Piffeldier" system, and will, therefore, not stand the winter breezes.

I should strongly advise Mr. Drake to set about smashing the "Mann" monoplane as soon as possible, for by next summer it may have set him a still harder nut to crack. Its present record is three-quarters of a mile; what will it be in six months' time . . . ?

E. R. BROWN.

Sir,—Re Mr. Grimmer's answer to my letter, I certainly was under the impression that the "Mann" full-sized aeroplane was to follow the lines of the model, at least in dimensions, if not in actual construction. What could he expect anyone else to believe when one read his letters to his critics? All his argument has been about comparing models to full-sized machines.

I still maintain that the "Mann" model does nothing to help aviation in the least bit. Why did not Mr. Grimmer explain the features of the stability employed in the "Mann" model? Its longitudinal stability may be perfect, but any model-maker knows that the 1—1—2P—0 type, with the elevator placed at a bigger angle than the main planes, is the best method of insuring longitudinal stability. But its lateral stability cannot be anything like perfect; the model does not even employ a dihedral angle to the main plane.

Does Mr. Grimmer mean to say that because his model, with only  $\frac{1}{2}$  ft. of surface, flies in 60-mile-an-hour winds that his full-sized machine, with about 150 ft. of surface, will do the same? Let Mr. Mann or Mr. Grimmer build a model with 2 or 3 sq. ft. of surface, and fly it in a high wind, and they will soon find a difference.

If Messrs. Mann and Grimmer want to show that they can do something to progress aviation let them build a scale model of their proposed full-sized machine. Let it include proper built-up planes (with their own designed camber), a fuselage, a landing chassis, carved propellers, and all the little details that one finds in a full-sized machine. If such a model rises from the ground and flies 50 yards it would do more for aviation than all the mere stick-and-wire affairs which fly half-miles. The elastic motor is just the thing for scale-models: as I have just described (I mean the 1—1—2P—0 type).

Before I conclude this letter, I would like to say that I do not want Mr. Grimmer to imagine for a moment that I am taking an advantage of him by writing these straightforward words, because it is the last letter I will be able to write on the subject. I hope he will take them in a good way, as I am looking forward some day to hear his lecture, if ever he is going to give one in Manchester, and I hope he or someone else will waken up a few aeronautical gentlemen to a sense of duty in this town, where one does not see a full-sized aeroplane, or even a glider, from one year to another.

Cheetham.

MANCUNIAN.

Sir,—I notice that Mr. Grimmer, in his last eulogy of the "Mann" monoplane, states that the speed of a heavily-loaded machine of this type is 20 m.p.h.

He also states that one of these machines flew at a public demonstration at Felixstowe "with ease and grace in winds up to 60 m.p.h." As no machine—"Mann" or "super-Mann"—could fly with ease and grace across a wind of this velocity, it follows that the model was flying (a) backwards against the wind at 40 m.p.h.; (b) with the wind at 80 m.p.h.! How does Mr. Grimmer reconcile this performance with his swooping declamation of "projectioplanes"? Perhaps he does not know that the winner of the French Military Trials was the fastest machine in the world.

Mr. Grimmer states that in case (b) his machine flew nearly a mile. As, although flying with ease and grace at four times its normal speed, the "Mann" monoplane in question covered less than twice its advertised-in-every-paper-in-the-world distance, Mr. Drake's estimation of its capabilities is probably correct.

With regard to the machine itself, its records are due to abnormal lightness, not scientific design. Any machine of the dimensions of the "Mann" which I have seen at our meetings weighed about 10 ozs., and had decently designed planes and respectable propellers. I think even Mr. Grimmer must know that (a) the planes are heavily cambered to give them strength and allow of the use of light materials; (b) the propellers are intended primarily to use up power slowly. Even he cannot be so ignorant of aviation as to suppose that steamed wood screws, with flat blades, can possible be efficient.

Re his suggestion that model clubs should put a ban on the flying of high-speed machines, it is difficult to see how they could do more harm to scientific model flying than they have done by putting up prizes and ridiculous certificates for duration and distance, so they had better adopt it at once and also close competitions to any models not approved by Mr. Grimmer.

Bristol.

R. V. TIVY.

SIR,—It is a pity this discussion about freak models must cease, for I would have liked to thrash out thoroughly certain points with Mr. Grimmer.

Being a mere medical student, I do not pretend to be an expert on any branch of aeronautics, but I do try and stick to common sense.

Mr. Grimmer quotes this passage of my last letter: "The greater the loading, the higher the speed must be to give the necessary lift." To prove the fallacy of this statement, he tells us that one of his "Mann" models, with a loading of 8 ozs. to the square foot, flies at a speed of 20 m.p.h. Now the "Mann" No. 31 has a loading of 7 ozs. to the square foot, with a speed of 18 m.p.h. It is evident that the increase of loading has resulted in an increase of speed. Of course, I am aware that, besides speed, increase of angle of incidence and increase in camber will also result in greater lift.

Mr. Grimmer goes on to mention loading in various birds. Perhaps the "5 or 6 lbs." I mentioned were excessive, but I imagine that if all the loadings he cited were doubled they would be nearer the mark. Take, for the sake of an example, the loading of a sparrow; its weight is at least 1 oz., its surface not more than 16 square inches, and therefore its loading not less than 9 ozs. to the square foot.

I acknowledge that the terrific loading of 15 lbs. to the square foot for the Blériot was an error on my part, and should be reduced to 5 lbs. But I still entirely fail to see why the 80 m.p.h. Dep. is less a projectile than the clipped Blériot or my modest 35 m.p.h. model. The reason given by Mr. Grimmer is that the Dep. is scientifically designed. What about the Blériot? Perhaps the future "Mann" machine, notwithstanding its calculated speed (240 m.p.h.) will not be classed by Mr. Grimmer as a projectile, for the only reason that it was evolved after "pages upon pages of algebraical calculations."

Apparently the only grudge Mr. Grimmer bears to the high speed model is its probable danger to the public. Speaking of my own model, it has never yet in its many flights struck anyone. This I attribute to its high flying; the only time it might strike an onlooker would be on its descent, when the speed would have greatly diminished. Mr. Grimmer seems to forget his own words in an article on the "Mann" monoplane: "Despite its numerous collisions with human beings, the machine has never sustained the least damage!"

L. S. C. ROCHE.

Sir,—I notice in last week's issue that E. R. Brown says that "most model-makers usually prefer to give their frame a small margin of 'unnecessary strength' in order that its life should not be restricted to a single flight." This, I contend, is altogether absurd, for if the strength is unnecessary, why should it be created? Besides this, strength is created for the specific object of preserving the life of the model in the case of a rough landing. I know quite well that a small margin of strength is necessary, but that this margin should allow more than double the strain on the frame is out of the question.

Mr. Grimmer has stated that the ideal proportions were arrived at by means of "pages upon pages of algebraical calculations." Now, I will exclude the length of fuselage and the

pitch of the propellers, as being affected by having to use a rubber motor, but the design of the main planes will remain unaltered on the full-sized machine. Therefore, it seems that the theory that the depth of camber should not exceed 1-12th the chord has been altogether disproved. Yet why do modern designers of full-sized machines still cling to the original theory?

Then, again, it is generally accepted that a fast machine is preferable to a low-speed one when in flight, and as the "Mann" model does not rise from the ground it should be a second-rate machine. It has been advertised that the "Mann" model will do its quarter-mile in 60 secs., or at the rate of 15 miles per hour. When the full-sized machine makes its debut we shall see it crawl along the ground till it gets up to 15 m.p.h., and then it will rise and fly.

In Mr. Grimmer's letter he says he has experimented with different-sized propellers on the same model, and still disagrees with "Piffelflieger." I have also experimented. I fitted one of my standard models with two 8-in. propellers, with a pitch of 32 inches, and then with two 9-in. propellers with a pitch of 30 inches, and had flights under the separate conditions which were within 60 feet of the same length.

In conclusion, I notice that Mr. Grimmer now says that speedy models (you notice that I do not call all speedy models freaks) should not be designed, but should rather be discouraged, owing to the fact that sometimes people get hurt by them.

What on earth, I ask, has that to do with scientific design? Sudbury. MONTAGUE L. ROLFE.

Sir,—Ha! Ha! I have it at last! Why does the Government so long tarry?

Of course, the reason is obvious. They are waiting for the "full-sized 'Mann' monoplane." That will revolutionise things. England shall not, withal, sink into a state of utter degradation.

Bexhill. G. A. H. R.  
[This controversy has now ceased.—ED.]

### Compasses.

Sir,—With reference to your correspondent's (Mr. T. Philpot) remarks, no doubt a gyro-compass would be "the thing," but the difficulties in the way at present are enormous. The gyro, as fitted to a compass, weighs about 12 lbs., and has to be kept continuously running at 20,000 revs. per minute. Having started, it is useless as a compass until it has steadied down, which occupies from two to three hours.

There are many other difficulties, one of them being the price, which, I believe, is somewhere in the neighbourhood of a thousand pounds.

Kensington. ERIC H. CLIFT.

### One View of the Question.

Sir,—  
On the fifteenth of November, where the Services United Of the Army and the Navy congregate in friendly fashion, Straight uprose the valiant Captain, he, the Captain of Royal Irish.

Prophet, he, of aviation; keen his vision of the future; Eagle-eyed he looks before him, solves the problem of the future.

In forceful words he tells them, tells these men who guard our Empire,

How the aeroplane, in warfare, flying swift in reconnaissance High above the foe's forces, hovering with outstretched pinions,

Out of reach of his projectiles, makes of no avail his tactics, For the scout, with clear-eyed vision, marks where he has placed his forces—

How his cavalry is gathered in the shelter of the woodland, How his left, extending snake-like, crawls along the hidden by-path.

While his right, in yonder forest, waits with guns securely posted.

Back he flies to his Commander with the priceless information,

From the clouds he sweeps, unerring, to the feet of his Commander,

Shows the notes that he has taken; tells where lie the hidden foemen;

Thus to naught is brought the wisdom of the craftiest opponent,

Though he have the wit of Solon and the wisdom of the serpent,

Useless all his calculations, by aerial scouts frustrated!

Thus the Aeroplanists' Prophet, he the brave Royal Irish Captain,

Told the rapt and eager soldiers of the great United Service How the victory, in future, would depend upon the pilots

On the scouts with fastest war-planes, greatest skill and strongest engines,

And implored the Lords in Council to encourage aviation, Give both money and employment to the students of the science,

Teach their young men to be pilots, help the industry in all ways,

So that we may rest securely, knowing that our land is foremost

In the onward march of progress, in the aviator's science!

But—I know not how to tell it!—one there was in that assembly

From the Staff of the War Office, of the Engineers a Colonel; Bound and swathed he was in red-tape, like an owl that hates the daylight!

Solemn! stolid! retrogressive! lacking in imagination! He pooch-pooched each wise suggestion, laughed to scorn aerial warfare.

Deprecated "wild ideas"—sneered at all civilian pilots, Said that "only trained officials were of any use in scouting"

(Did he never hear of Driscoll's, Rimington's, or brave Strathcona's—

Every man of them civilian—and the services they rendered?)

"No doubt," he said, "this modern science, aeroplanes, and airships,

Some day may form a useful adjunct to our present methods!"

With faint praises damned their efforts, threw cold water on their projects,

Offered neither help nor money to the struggling aviators.

Oh, thou ostrich-like War Office! in the choking sands of custom

Thou hast buried thy wise cranium while the more progressive nations

Eagerly outstrip each other in their scientific methods, Giving prizes for inventions, training pilots by the hundred!

While you hesitate and dally in your blind insensate folly! Waken up! and look around you; see what rival lands are doing,

Redeem with instant action, free yourself from hide-bound tramels,

Let others see that Britain holds her own among the nations. Holds her own? Nay, leads the vanguard in the forward march of nations!

Belfast. E. B. L. K.

### A New Height Record.

Prévost reached a height of 3,000 metres (9,800 feet) with a passenger, on December 2nd. This is a world's record. As usual, he flew a Deperdussin, the same on which he went through the French military trials. The upward journey took 55 minutes and the downward 12 minutes. A fine test, both up and down, for a big, heavy three-seater.

### THE VISITORS' LIST.

MR. CLAUDE GRAHAME-WHITE came in to say "good-bye" the day before leaving for America. He was just back from the International Conference at Rome, which had awarded him the £2,000 Statue of Liberty prize—and about time, too! Apparently, there is usually considerable difficulty about getting prize money when in America, for Mr. Grahame-White told us that there are still several quite large amounts owing to him from various meetings in the States. It appears that he has also got a couple more objections to bring before the next meeting of the International Conference, owing to the fact that, although he broke the world's record with a passenger at one meeting, he was not awarded a prize, on the ground that he started after the specified time. Unfortunately, the rule said that the expiry of the time limit should be signalled by the report of a cannon or bomb, and, as no signal was given, there was naturally nothing to intimate that the time had expired. Furthermore, the fact that Mr. Grahame-White did not start before was entirely due to the fact that the mismanagers of the meeting had omitted to provide an official to look after barographs for the competitors, and he wasted nearly half an hour running about trying to find somebody



who had got one of the official barographs. His case certainly seems an uncommonly good one, so he deserves to win it. Mr. Graham White is on his way to California, where he has some important engagements booked during the winter, though he expects to be back early in the spring, in good time to set to work on anything that may be worthy of his attention in connection with the forthcoming military trials. Undoubtedly, with the workshops now equipped at the Hendon Aerodrome he ought to be able to turn out machines of any type as good as the best.

**MR. T. O. M. SOPWITH**, who at the moment of writing was still undecided whether to return to the States and fly there during the winter or to remain in this country and take an active part in the provision of machines for the Army, expresses his very great satisfaction with the new Martin Hand-yside monoplane which he has been flying at Brooklands, and it is, of course, eminently satisfactory that the firm have at last reaped the reward of their pluck and determination by turning out a machine which really flies well. Mr. Sopwith says that the machine handles as easily as any monoplane he has ever flown, and seems to have considerably more automatic stability. He explained that his accident the week before last was in no way caused by the machine itself, but was entirely due to the fact that he landed while turning, and, having a passenger on board, the side strain was too great for one of the wheels, so that the accident was in no way cast any reflection on the flying powers of the machine.

**MR. JAMES VALENTINE**, just back from Salisbury Plain, was full of praise for the new Bristol monoplane, on which he obtained the first British "Higher Certificate" won on a monoplane. He says that the machine is noticeably stable by nature if one only leaves the controls alone, but that the machine is extremely quick on the controls, so that if one keeps on "stirring the cloche" the machine naturally waves about a good deal. Laterally, except when hit by a real gust, the machine needs no stabilising at all, and longitudinally, if one lets go of the control lever, it gradually descends, simply owing to the weight of the elevator flap causing the rear edge to drop, and so raise the tail slowly. He is of the opinion that with a light elastic to keep a slight backward pull on the lever the machine could be absolutely left to fly itself. Mr. Valentine says that, whether a passenger is carried or not, there seems no appreciable difference in the handling of the machine, or in its speed, and as it is timed to do fully sixty miles an hour with a 50 h.p. engine, carrying a passenger, it is evident that the machine must be highly efficient. He was particularly struck by the strength of the under-carriage, for, being unused to the machine, he made several rather rough landings while practising, and eventually carried away a wheel when landing with a passenger on board. Nevertheless, no damage was done at all to the chassis or any other part of the machine.

**MR. S. F. CODY**, the first pilot to win the "Higher Certificate," gave us one of his usual graphic accounts of the performance. Of course, to such an experienced flyer as Cody the "Higher Certificate" was merely child's play, so he amused himself, as is noted elsewhere, with taking one passenger for company on his cross-country trip and two passengers for the height test. It was originally his intention, when doing his glide from 1,300 ft., to throttle down the engine so that he could start it up again if necessary, but, having such a large population on board, somebody's feet got mixed up with the throttle wires, and the only way of stopping the engine was to switch right off, which he did. One does not know of any other case where a machine with three people on board has done a *bona-fide* glide from such a height. Mr. Cody, although more than satisfied with the work he is getting out of the 60-80 h.p. Green, which seems to be able to make his machine do considerably more than any other biplane in the world with anything like the same power, is of the opinion that the machine is really underpowered, so he hopes before long to show what the machine really can do by fitting it with an engine of 120 h.p. There are also ideas in his head for a Cody monoplane which is going to do something terrific in the way of speed, and for a biplane which will do 80 miles per hour with one person on board, about 70 miles an hour with two persons, and a big supply of petrol, simply by adding extra sections to the outsides of the wings, and will do about 60 miles an hour with four people, or their weight in wireless apparatus or explosives, if fitted with extensions, so that it would only be necessary to have one machine and engine, plus extra sections and extensions to the wings and different propellers for all three purposes. Knowing our Cody, we can believe that such a machine will be produced, for he has never yet said that he could do anything with his machine that he has not ultimately done.

**MR. SEYMOUR METFORD**, who was the first Territorial officer to take his certificate, called to discuss aviation for the Territorials. He took his certificate on a 32 h.p. Blériot at Hendon, and was then flying in excellent form, though, being above the average in build and weight, he cannot have had much power to spare. He contemplates joining the Balloon Section of the London Territorials, and should, with his experience of real flying, be a valuable asset when Territorial aviation, now being started by Mr. Frank McClean at Eastchurch, is properly taken in hand and developed by the War Office.

**MR. JOHNSTONE**, of the Vickers Co., who, since his recent accident, has been taking a "postman's holiday" flying in France, returns with considerably enlarged views on aviation. He has come to the conclusion that any superiority French aviators may have is due almost entirely to their weather and the country over which they fly. He is certain that our schools in this country look after their engines better, and get more work out of their machines, and he seems to have quite lost any respect he ever had for the average French aerodrome mechanic, whom he regards as slack and careless when compared with our men. He has done some quite nice cross-country flights while in France, and so should be doing something useful before long, now he is back at work again at the Vickers School at Brooklands.

## CLUB NOTES.

**Birmingham Aero Club.**—On Saturday E. Trykle and G. Haddon Wood were only members whose models flew. There was, however, great attraction in trials of model glider. Cords were attached to the ends of planes, glider was towed, and rose to 20 ft., and remained there for several minutes. Towers afterwards walked with wind for 200 yds., glider remaining aloft. On Sunday, being fine, quite a flock of model flyers on ground. Best flight by E. Trykle. Model, after flying for 40 secs., made glide of 150 yds. from about 50 ft., glide lasting about 35 secs. A. F. McManis, George Mason's and G. Baker's models distinguished themselves.—G. HADDON WOOD.

**Brighton and District Model Aero Club.**—Club met at Brighton-Shoreham Aerodrome (by kindness of proprietors) on Saturday, December 2nd. Many fine flights by Bate, Burghope and Holford. White and Von Wichmann had very bad luck. Wind, though very regular, doubtless owing to flat country round aerodrome, was too high for small models, and several smashes were result. Burghope's huge 21 oz. monoplane flew splendidly. Bate flew very high with several models. Club meets next Saturday, December 9th, at Shoreham Aerodrome, as usual.

**The Reigate, Redhill, and District Model Aero Club.**—Inaugural meeting held on November 29th, when officers were elected and plans discussed. It was decided to commence work on January 1st, 1912. In meantime it was suggested exhibition of model flying should be given either just before or after Christmas. All interested in flying are invited to next General Meeting. Date will be announced next week.—HALL, V. MAY (Hon. Sec.), 4, London Road, Redhill.

**South Essex Gliding Club.**—The above club, which was announced last month as having been formed, now has plans complete and is about to embark upon the construction of a full-sized glider of the biplane type. This club, we are proud to say, was acknowledged by Mr. H. W. H. Vaughan at the time as being the first society to be formed in this country for the exclusive purpose of constructing and flying of full-sized gliders.—BRANST A. Sissons, Hon. Sec.

**Dundee Aero Club.**—On Saturday, 25th ult., competition held for prize presented by Mr. Urquhart. Winner, Mr. Myles. In evening Mr. Urquhart arrived from Edinburgh and lectured in Broughty Ferry to audience of about 400. Very successful paper read by Mr. Luis before the Junior Section of Dundee Institute of Engineers, and demonstrations were given with models by secretary.—D. ROBERTSON, Hon. Sec.

*N.B.—Club Notes must be posted to 166, Piccadilly, to arrive not later than first post Monday morning.*

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERLEON, London.

Telephone: Mayfair 6407

## SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM			ABROAD		
	s.	d.		s.	d.
3 months, post free	1	8	3 months, post free	2	9
6 " " "	3	3	6 " " "	5	6
12 " " "	6	6	12 " " "	11	0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsagents, each issue can be obtained direct by forwarding remittance as above.

**MISCELLANEOUS ADVERTISEMENTS**

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words  $\frac{1}{6}$ ; Situations Wanted ONLY—18 words  $\frac{1}{-}$ . 1d. per word after.

**MACHINES.**

**£600** COMPLETE. For the easiest machine to handle, the most stable, the most compact, you must see the Avro Biplane. For passenger and cross country. A. V. ROE AND CO., Brownsfield Mills, Manchester.

**ENGINES.**

**60** H.P. Green Engine, practically new, Dual Ignition, Flywheel, Pumps, Radiator, all perfect, going cheap. PLANES LTD., Duke Street, Birkenhead.

**45** H.P. J.A.P. Eight-Cylinder Water-Cooled Bosch Magneto, nearly new. Price £50.—T. F. BROOK, South Parade, Huddersfield.

**PROPELLERS.**

**P**ROPELLERS:—Avro propellers of proven efficiency. "Pashley fitted Avro propeller, suddenly found troubles disappeared, and flew five good circuits." [AEROPLANE.] Equally good results if fitted to your machine. A. V. ROE AND CO., Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS** hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

"**B** LACKBURN" propellers supplied, and successfully used on all the leading motors. THE BLACKBURN AEROPLANE CO., Leeds.

**EMPLOYMENT.**

**D**RAUGHTSMAN—Constructor now disengaged requires position, over 2 years Mono and Biplanes, and Propellers, London district. Box 410. — THE AEROPLANE.

**A**VIATION. The British and Colonial Aeroplane Co., Limited, builders of the "BRISTOL" AEROPLANES, are now prepared to take a few selected premium pupils in their Works for a thorough course in Aeroplane construction. Apply, stating age, educational qualifications, etc., to THE SECRETARY, Filton House, Bristol.

**TUITION.**

**£25** TUITION until brevet is won on Blériot and Chanter monoplanes: or £25 including all breakages. CHANTER, Brighton Aerodrome.

**£50** TUITION in flying till certificate is won. Three-quarters of the prizes at Weybridge during 1911 won by AVRO pupils. THE AVRO School for most thorough and all-round instruction. A. V. ROE AND CO., Brownsfield Mills, Manchester.

**£75** TUITION for Aviator's certificate on both Deperdussin and Blériot Monoplanes. Insurance against breakage and third party risk. RETURNED to pupil in the event of no breakage. Perfect equipment. Personal instruction. Write for agreement form. W. H.

**£15** EWEN, Lanark Aerodrome, Lanark

**H**ERBERT Spencer Flying School. Brooklands Aerodrome, Weybridge. Tuition from £40. Passenger flights from £2 2s.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION CO., 185, Hope Street, Glasgow, or Barrhead.

**D**EPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; thorough tuition £75, including breakages and third party insurance. Apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD., 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

**F**ILEY AERODROME. Tuition on Blackburn or Blériot Monoplane. For particulars apply BLACKBURN AEROPLANE CO., Leeds.

**MISCELLANEOUS.**

**A**CHARMING AVIATRESS, 1/- Post Free. Christmas Fun with Jig-saw puzzles; this is the latest and best for hours of amusement. JIG PUZZLE CO., 2, Edbrooke Road, Paddington, W.

**H**ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**C**HRISTMAS PRESENTS. BEAUTIFUL MODELS GUARANTEED FLYERS. Little Gem 2/3 post free; A1  $\frac{1}{4}$  mile prize-winner, 5/- post free; Lift-off-ground prize-winner, 5/6 post free; Monoplanes. All accessories and model parts cheapest in the world. Send  $\frac{1}{2}$ d. stamp for list.—WESTON HURLIN CO., 2, Edbrooke Rd., Paddington.

**FLYING MODELS.**

**A** STANDARD "Mann" Monoplane, flown by Mr. Mann on November 25th, at Mitcham Common, made a flight of 1,400 yards (over  $\frac{1}{4}$  mile), which constitutes a world's record. "**Willis' rubber and 'Willis' lubricant were used!**" In order to advertise the sets of parts for building a "Mann," we are giving for a limited time a 2 oz. bottle of "Willis' lubricant to every purchaser of a set of parts, and we are making the same present to every purchaser of a pair of "Mann" propellers, two dozen yards of our quarter-inch or three dozen yards of our eighth-inch strip rubber. **Order early to avoid delay, we expect a big rush.** Parts and instructions for building a "Mann" record breaker 5/6, "Mann" geared winders 5/6, "Mann" propellers 3/6 per pair, "Willis' lubricant 9d. per bottle, "Willis' quarter-inch rubber 3/- per two dozen yards, "Willis' eighth-inch rubber 2/9 per three dozen yards, all post free in the United Kingdom, foreign orders carriage forward. We are gradually working off the back orders and hope soon to be able again to supply complete "Mann" Monoplanes. **Please note that we guarantee all our goods British-made by British non-sweated labour, we do not stock cheap rubbishy goods!** WILLIS Bros., 14, Wellington Square, Hastings.

**"D**ISTINCTIVE" Monoplanes have built up **triangular fuselage, loaded elevator, non-lifting tail.** Built of Silver Spruce. **French Polished.** List 1d.—M. ROLFE, Chilton, Sudbury, Suffolk.

**M**ODEL PROPELLERS—Genuine CHAUVIERE—8in., 10in., and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.

**N**EW Catalogue of Model Aeroplanes. Accessories now ready. J. BONN AND CO., LTD., 97, New Oxford Street, London, W.C.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")



Vol. I.]

THURSDAY, DECEMBER 7th, 1911

No. 27

## REPAIRS

To the Gnôme or  
any other make of  
. . aero engine . .

Damaged engines rebuilt,  
and nothing but work-  
manship of the highest  
possible standard, by

**HESSE & SAVORY**

ENGINEERS

TEDDINGTON, S.W.

## AVRO

Reliability is essential in every part designed  
for use in aeroplane construction, and our

**ACCESSORIES**

are of proved reliability.

A.V. ROE & Co., The Aviators' Storehouse,  
Brownsfield Mills,  
MANCHESTER.

## QUALITY

## BLACKBURN

**MONOPLANES &  
PROPELLERS**

For Durability, Stability, and Efficiency  
**TUITION.**

Write for prices and particulars to—

**The BLACKBURN AEROPLANE Co.,**

Phone: 2822 Central.

BALM ROAD, LEEDS. Telegram: "Propellers, Leeds"

THE

## FLANDERS MONOPLANE

60-80 H.P. Green Engine (Circuit of Britain Type). One, two, or three seaters.

Pupils taught on monoplane with double control. £10 returned in event of no damage.

L. HOWARD-FLANDERS & CO., Brooklands, Weybridge.

## TUITION

**£75**

**INCLUSIVE**

**E. T. WILLOWS · L<sup>TD</sup>**

STOCK  
DIRIGIBLES

"City of Cardiff" Type, to carry 4, £900 complete.

New Light 2-Passenger Model - - £370 "

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

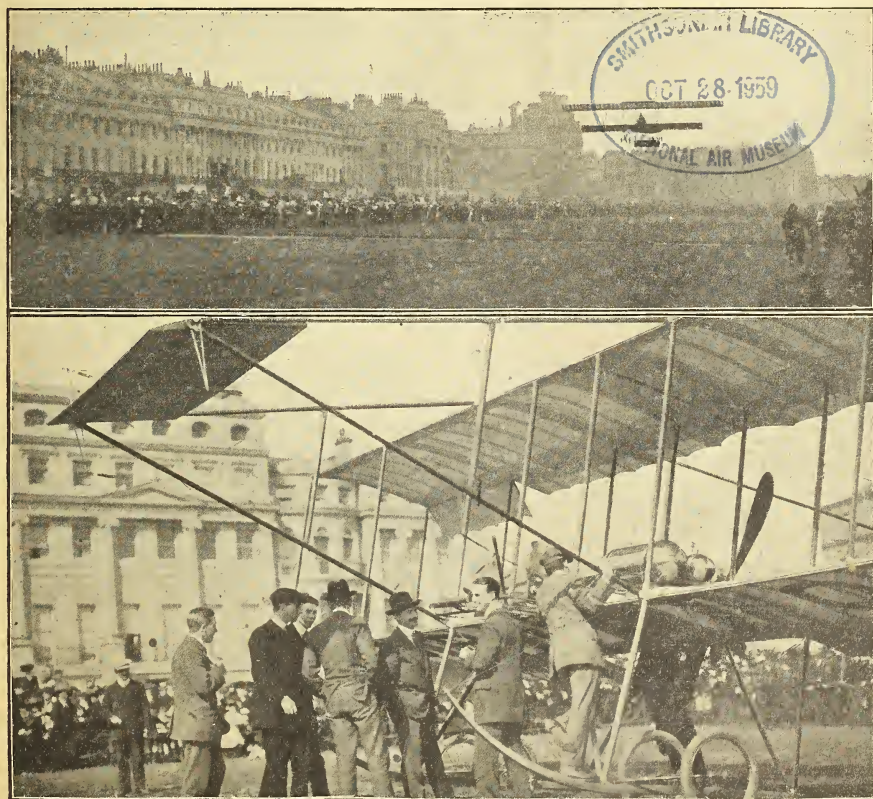
1<sup>p</sup>  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, DECEMBER 14th, 1911.

No. 28

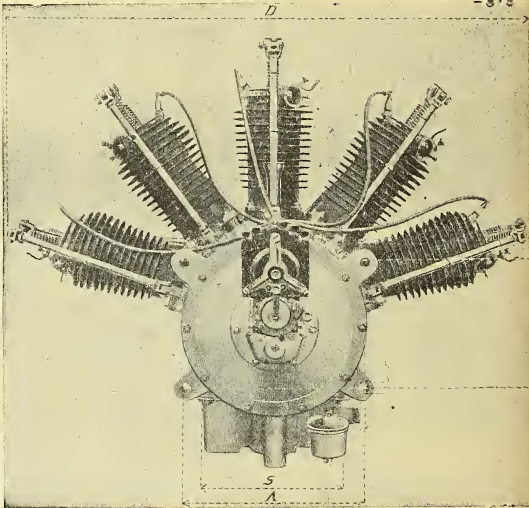
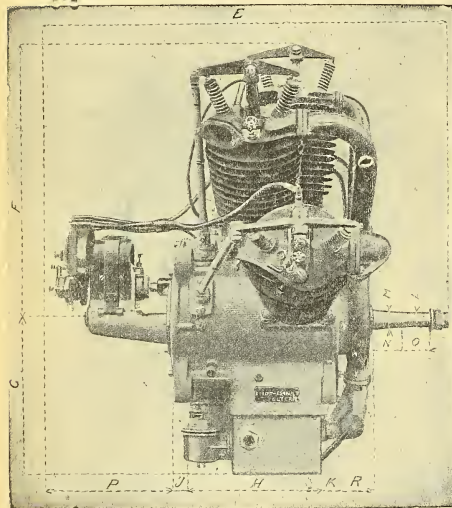
## A REMINISCENCE OF SUMMER.



Above :—Graham Gilmour, landing on Hove Lawns. Below :—After the landing : Gilmour and his friends with the Bristol Biplane. Standing on the skid is Gordon England, next him is Gilmour, talking to Mr. Thurston ; the back is that of O. C. Morison, talking to P. K. Turner.



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

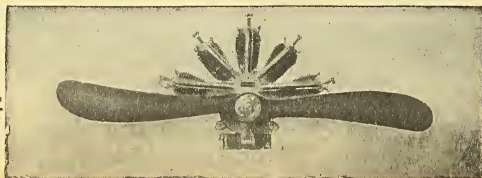
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	7.1"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.93"	2.67"	10.9"	.39"	2.68"	9.84"	.83"
60 H.P.	14.15"	10.25"	.79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.



## CONTENTS.

	PAGE
LORD HALDANE AND MILITARY AVIATION...	651
QUESTIONS IN THE HOUSE ... ..	654
AIR CURRENTS ... ..	656
A MILITARY DEBATE ... ..	658
THE WEEK'S WORK... ..	662

	PAGE
THE FIRST MILITARY SUPERIOR BREVET...	664
THE TRAGEDY AT FILEY ... ..	665
ANSWERS TO "QUESTIONS FOR PILOTS"...	666
CORRESPONDENCE ... ..	668
CLUB NOTES ... ..	670

## Lord Haldane and Military Aviation.

On Wednesday of last week the question of military aeroplanes was brought up for the first time in the House of Lords, and those who realise the importance of adequate aerial defence to this country will also realise how much they owe to Lord Hardwicke and Lord St. Aldwyn for drawing attention to the subject. The following is the report of Lord Hardwicke's question, and Lord Haldane's answer, as given in *The Morning Post* :—

THE EARL OF HARDWICKE (U) asked what policy his Majesty's Government proposed to adopt with regard to the training of the necessary mechanics, pilots, and military observers, and the provision and maintenance in war of sufficient aircraft, so as to remove the serious disadvantage which we at present suffer in this respect. He inquired further whether the Government intended to give any practical encouragement to the manufacturers of this country with a view to enable them to supply the Government with British-built machines. The noble Lord referred to the practical demonstration of the utility of aeroplanes in warfare in Tripoli and in the French, German, and Roumanian manoeuvres, and to the fact that while France already had at her disposal between 200 and 300 war-planes and military pilots and Germany had at least fifty qualified military aviators, besides numerous others in training, and not less than four military schools, Great Britain had only six officer-aviators and twelve aeroplanes, of which only three could be described as serviceable for war.

VISCOUNT HALDANE (Secretary for War) replied that the Treasury had not put any obstacles in the way of the War Office in this matter, but he personally was loth to spend money unless he felt certain of being able to obtain the best possible results. No doubt, this country was a good deal behind many others in connection with this problem; but there were reasons for this. Nothing helped aviation so much as an enormous army operating over a wide strategical area of more or less level country. Such conditions existed in France and Germany, with the result that in those countries it had been possible to greatly extend the air services. On the other hand, we required an air service for a comparatively small army. The whole field of air work was still very undefined. Germany was changing the type of her airships, and apparently she was turning to the aeroplane. It was by no means unlikely that an intermediate type of small airship would prove to be of the greatest service. We had already twelve aeroplanes, and three more were being built. Several—certainly more than the three specified by the noble Earl—were ready to enter the firing line. There was sufficient money provided in the present Estimates to buy five times the number of aeroplanes that we had already, and the Government were steadily buying. It was only a question of what was the best type to buy, and when that was settled no doubt the Government would offer prizes to manufacturers in this country. It was not an easy matter to determine what was the best type, because the type of aeroplanes changed almost every month. The Army Air Battalion which had been instituted consisted of 12 officers, 125 rank and file, and a staff. There was also a Construction Department. The War Office was now considering how far they could work the Training School establishment in conjunction with the Navy, as this was a most important factor in obtaining the utmost possible results from our air service.

THE EARL OF HARDWICKE said a strong feeling existed in the country that there was a certain amount of apathy on the part of the Government in connection with this important subject. He could not see why they should not do as France did, and help the industry by means of subsidies.

VISCOUNT ST. ALDWYN (U) regretted that this country should have made such very slow progress. The War Office appeared to be waiting for some design of perfection in aeroplanes, and he was afraid that if we were to be involved in war we should not find ourselves very well prepared with these appliances at the present moment. He urged on the War Office the necessity of obtaining some of the very best appliances that could be procured now, without waiting for a design in the future which might never be attained. (Hear, hear.)

It will be noted that Lord Hardwicke referred to the fact that out of the fifteen aeroplanes said to be owned by the War Office, only three can be estimated as serviceable for war. No doubt he referred to the same three machines which were mentioned in *THE AEROPLANE* last week, namely the Nieuport, Bréguet and Blériot.

## Satisfaction and Disappointment.

Lord Haldane's reply is both satisfactory and, in a manner, disappointing, for it appears that he does not yet quite realise either the possibilities or the importance of the aeroplane. It is exceedingly interesting and satisfactory to note that the Treasury has not put any obstacles in the way of the War Office, but it is certainly somewhat unfortunate that Lord Haldane should, as he appears to do, wish to wait until something approaching finality is reached before spending money.

One of his Lordship's statements, with which the writer begs leave most respectfully to differ, is that "nothing helps aviation so much as an enormous army operating over a wide area of more or less level country." On the contrary, the writer submits that military operations carried on in a hilly, heavily wooded country would make aeroplane reconnaissances very much more necessary than would operations in level country.

For instance, on the big French plains an observer in a captive balloon at a height of three or four hundred feet, equipped with a good telescope, would be able to sweep the country for some thirty or forty miles round, whereas in a country like Surrey, for example, only an aeroplane would be able to give reliable information as to movements of troops ten miles away, and obviously the hillier and more enclosed country the greater is the number of aeroplanes which would be necessary.

## A Small Army and a Big Country.

Another statement by the noble Lord seems to call



for comment, namely, that we require an air service for a comparatively small army. The writer begs, with a due deference, to suggest that we require an air service not for a very small army, but for an extremely rich, an extremely helpless, and an extremely thickly populated country. In his lecture at the Royal United Services Institute Captain Burke pointed out that in all probability, in the first war in which aeroplanes were used to any extent, all the best pilots on both sides would be put out of action in the first few days and that the command of the air would be left with the survivors. It seems, therefore, that if we have an air service strictly in proportion to the size of our army, as compared with the French army, or the German army, and should come into hostile contact with the air fleets of either of those nations, our fleet would be practically wiped out of existence in a day.

One most important point must be considered by all those concerned with our national safety, namely, that military aviation is not concerned merely with a small aeroplane contingent intended to operate in conjunction with our overseas striking force, but is concerned with the aerial defence of every foot of our enormous coast line, and that before we can be considered to have a really adequate air force, we must have a regular military air station at every one of our important ports, for it must be recollected that coast defence is a military and not a naval job.

We must be prepared at any moment to concentrate a sufficient force of aeroplanes at any port to repel a hostile force of aeroplanes crossing the German Ocean, and it must be further recollected that there exist to-day some dozens, and indeed one may say some hundreds, of aeroplanes actually capable of making a trip from Heligoland to our eastern coast and back, while, of course, it is mere elementary school knowledge that hundreds of French aeroplanes could fly from France to England and back, doing immense damage without receiving any.

#### Facts and Fancies.

It would appear on the face of Lord Haldane's answer that he still has a fancy for the dirigible, and one can quite understand this fondness, in view of the fact that he has actually had a trip in a dirigible, but one may feel sure that if Lord Haldane could only spare time to watch for even a short period the operations of really modern aeroplanes, as differentiated from "effective" box-kites, in comparison with dirigibles he would see that at the present

moment the finest dirigible in the world is utterly helpless against even a comparatively second-rate aeroplane.

The writer would not for one moment suggest that the dirigible has no future in warfare, but he does say most emphatically that the dirigible will never be of as much use as the aeroplane. If it is small it cannot possibly be driven at the speed of an aeroplane, nor can it be used in a wind, and if it is large it cannot be handled while on the ground except by an enormous specially trained landing crew, and in either case it is a magnificent mark for aeroplane destroyers.

#### Inference and Fact.

It ill becomes one in the writer's humble position to disagree on so many points with the Minister who is responsible for the whole of our aerial defences, but it is necessary to point out once more certain statements in the noble Lord's reply which, while not in fact inaccurate, are quite liable to give an entirely erroneous impression.

He states, with reference to the twelve supposedly effective aeroplanes, that "several—certainly more than the three specified by the noble Earl—were ready to enter the firing line." The writer would deferentially point out that it is no part of an aeroplane's duty to "enter the firing line." The aeroplane starts from behind the firing line, rises above it, and returns to its starting place behind it. For such a duty, the writer states it again most emphatically, the British Army at the present moment only possesses three suitable machines.

The noble Lord further says that sufficient money was provided in the present estimates to buy five times the number of aeroplanes we have already. The writer suggests that we need at least twenty times the number of aeroplanes we possess at present, and we need them all to be "efficient," and not merely "effective."

Further, Lord Haldane states that the Army Air Battalion consists of 14 officers, 135 rank and file, and a staff. It is necessary, therefore, to point out again quite distinctly that the Army Air Battalion possesses four officers, and four only, available for active aviation service.

It is sincerely to be trusted that now Lord Haldwicke has proved to be such a good friend to aviation he and Lord St. Aldwyn, who backed him up in this question, will continue to keep the subject before the House of Lords.



A Modern War-plane:—The latest R.E.P. Two-seater.

THE

**GRAHAME-WHITE****FLYING SCHOOL,****The London Aerodrome, Hendon, N.W.,***The finest equipped and most accessible Aerodrome in the United Kingdom.***CONSULT US—DON'T DELAY.****COMMENCE NOW****A COURSE OF TUITION AT THE BEST SCHOOL,****WITH THE****BEST METHODS, MACHINES AND MECHANICS,****When Your Success During 1912 will be Certain.***Among the many successful Pilots trained at our school are the following:—***J. ARMSTRONG DREXEL** (Leading Amateur).**CHAS. HUBERT**, Pilot, Grahame-White School  
(1st U.K. Aerial Postman).**LEWIS TURNER**, Chief Pilot, Kennedy Aviation  
Co., St. Petersburg, Russia.**J. L. TRAVERS**, Engineer-Pilot, Messrs. Short Bros.,  
Eastchurch.**NAVAL LIEUT. O. DAHLBECK**, Chief Pilot,  
Swedish Navy.**CLEMENT H. CRESSWELL**, Late Chief Pilot,  
Grahame-White School (1st U.K. Aerial Postman).**J. V. MARTIN**, Chief Pilot-Constructor, Queen  
Aeroplane Co., New York, U.S.A.**W. RIDLEY-PRENTICE**, Manager, The Aero-  
nautical Syndicate, Ltd., Hendon.**E. F. DRIVER**, Pilot, The African Aviation Syndicate,  
Ltd. (1st U.K. Aerial Postman).**W. C. ENGLAND**, Managing Director, Burmah  
Aeroplane Syndicate, Rangoon.**MRS. C. DE BEAUVOIR STOCKS** (First Lady Pilot to carry a Lady Passenger).

Write for terms and particulars to—

**THE GRAHAME - WHITE AVIATION CO., LTD.,**

PROPRIETORS OF

**THE LONDON AERODROME, HENDON, N.W.**'Wires—'VOLPLANE' or  
'CLAUDIGRAM, LONDON.''Phone —  
KINGSBURY 22.



## Questions in the House.

### The Air Craft Factory.

(Monday, December 4th.) (Written Answers.)

MR. SANDYS asked what previous experience of aviation and of aeroplane construction any of the officers of the Army aircraft factory have had prior to their appointment; and whether such factory has ever turned out an aeroplane equal in effectiveness to those turned out by private constructors in this country?

COLONEL SEELY: The staff of the factory have been selected on account of their training in the branches which they have to supervise. The factory is at present only making an aeroplane for experimental purposes in connection with the Advisory Committee on Aeronautics. It has repaired and reconstructed damaged aeroplanes.

SIR HILDRED CARLILE asked what use, in view of the adoption of aeroplanes by the War Office, is being made now, and is likely to be made in future, of the new dirigible balloons owned by the Government?

COLONEL SEELY: The adoption of aeroplanes does not involve the abandonment of dirigible balloons, which will be used for the purposes for which they were originally intended and constructed.

### Army Air Battalion.

(Tuesday, December 5th.) (Oral Answers.)

MR. SANDYS asked the Under-Secretary of State for War whether the Army Council have come to a decision with regard to pay and allowances of officers of the Air Battalion?

THE UNDER-SECRETARY OF STATE FOR WAR (COLONEL SEELY): The matter is not yet settled.

MR. SANDYS: Is the right hon. Gentleman aware that there is great dissatisfaction among the officers of the Air Battalion owing to the delay of the Army Council in dealing with this question? Can he give an assurance that the matter will be dealt with on the earliest possible opportunity?

COLONEL SEELY: Yes, Sir; it will be dealt with in a very short time.

MR. SANDYS asked whether it is intended to increase the number of officers permanently attached to the Air Battalion apart from officers temporarily attached to the battalion for a course of military aviation?

COLONEL SEELY: The number of officers appointed to the Air Battalion is limited to the number provided for in the Estimates for this year. The Estimates for next year are not yet settled.

MR. SANDYS: I would like to ask the right hon. Gentleman whether in his opinion the system which he recently proposed in a speech in this House will give an aviation service in any way comparable with the French service, where the officers are permanently attached to the aviation service?

COLONEL SEELY: I think it will give a very adequate aviation service if properly carried out.

### Army Aviation Department.

(Thursday, December 7th.) (Oral Answers.)

MR. JOYNSON-HICKS asked the Under-Secretary of State for War whether, in view of the fact that French aeroplane manufacturers are already so fully supplied with orders from their own and other Continental Governments that they cannot supply machines to the British Army in quantities within a reasonable time, he will take immediate steps to purchase machines from such British manufacturers as may prove their ability to turn out satisfactory aeroplanes?

THE UNDER-SECRETARY OF STATE FOR WAR (COLONEL SEELY): Will the hon. Member kindly refer to the reply to the question put on this subject by the hon. Member for Taunton on November 28th, to which there is nothing at present to add.

MR. JOYNSON-HICKS asked whether the French Army regulations provided that officers engaged in the aviation department are to be treated as on full war footing with, in the case of accident, similar allowances and pensions to themselves or their widows as they would receive if wounded or killed on active service; and whether such conditions also apply to the English aviation officers?

COLONEL SEELY: The suggestion contained in the question that French officers engaged in the aeronautical service are placed on a war footing, and that in case of injuries they or their wives receive pensions or allowances as if the injury had been incurred on active service is inaccurate. Their service is only regarded as active service for purposes of promotion. The conditions for our own aviation officers are not yet settled.

MR. JOYNSON-HICKS: Will the right hon. Gentleman, having regard to both the danger and the necessity of this service, consider very seriously whether he cannot make an extra provision for those officers who are engaged in aviation?

COLONEL SEELY: Yes, certainly. Extra remuneration must be given. I have said, and I repeat, that I hope to be able to state the conditions very shortly.

MR. JOYNSON-HICKS asked how many effective aeroplanes are now owned by the War Department; how many of them are of English and French manufacture; and how many of each sort have been purchased since January 1st, 1911?

COLONEL SEELY: There are twelve effective aeroplanes at present owned by the War Department, and three more are under reconstruction in the factory. Of these nine are of English and six of French manufacture. Seven aeroplanes of English and four of French manufacture have been purchased since January 1st, 1911.

MR. JOYNSON-HICKS: Is the right hon. Gentleman aware that the French Government has over 250 of these aeroplanes at the present moment?

COLONEL SEELY: I do not think that is a matter I can deal with by way of question and answer. I have said that I hope to make a further statement before long. I will make a statement.

MR. JOYNSON-HICKS: Shall we have an opportunity of discussing the statement the right hon. Gentleman is going to make next week?

COLONEL SEELY: Next Session I should think we can fully discuss the arrangements proposed to be made.

MR. JOYNSON-HICKS: Before the final arrangements are made will the House have an opportunity of discussing what is proposed?

COLONEL SEELY: That is a question which should be put to the Prime Minister or the Patronage Secretary.

MR. JOYNSON-HICKS asked whether it is the intention of the War Office to make a grant of £75 to every officer who obtains his aviator's certificate, or whether this grant will only be given to those officers subsequently selected for aviation service; and whether it is his intention to attach every officer obtaining such certificate to the Air Battalion or only selected officers; and, if so, upon what basis in either case does he propose to make the selection?

COLONEL SEELY: The grant of £75 will be made only to those officers who are selected for aviation work and have a pilot's certificate or on their obtaining a pilot's certificate. Every officer who has been so selected and has obtained a pilot's certificate will be attached to the Air Battalion for a further course before appointment as Army aviator. The original selection will be made on the recommendations of commanding and medical officers as to the suitability of the officers for aviation work.

MR. JOYNSON-HICKS asked the Under-Secretary of State for War whether he is aware that, in spite of the fact that the recent French military aviation trials have been for machines carrying three persons, the French Government have nevertheless since the trials placed large orders for high-speed single-seated machines; and whether he will, in preparing his test regulations, provide for trials for single-seated and two-seated machines as well as for those of larger and heavier type?

COLONEL SEELY: It is considered desirable to confine the competition tests to machines capable of carrying two persons. Single-seated machines will be dealt with later.

MR. JOYNSON-HICKS asked the Under-Secretary of State for War whether, when he has ascertained the best type of machine by means of his cash prizes, he proposes to have it copied at the Army aircraft factory; and, if so, if he would state what is the size, number of men employed, and qualifications of such factory to turn out, say, 100 aeroplanes within the next six months?

COLONEL SEELY: The aircraft factory is not at present organised for doing more than experimental work and repairs to aeroplanes besides other aircraft work. The question as to how far, if at all, the factory should be used for construction of aeroplanes on the lines suggested is under consideration.

MR. JOYNSON-HICKS: Do I understand that the factory is not to be used for the construction of aeroplanes and that orders have to be given to outside factories?

COLONEL SEELY: As I have stated elsewhere, the proposal is that the aircraft factory shall not undertake the manufacture of aeroplanes at present on a large scale. We shall have to obtain our aeroplanes from outside sources as regards the greater number.

MR. JOYNSON-HICKS asked the Under-Secretary of State for War whether the latest production of the aircraft factory, namely, the balloon known as the "Delta," has burst every time it has been inflated before reaching a pressure which is

regarded as giving a sufficient factor of safety for practical use; whether on the last voyage of the airship "Gamma" to Salisbury Plain, the frame containing the crew and engine buckled in the course of the voyage; and, if so, whether he will lay before Parliament a full report on the working of such factory? COLONEL SEELY: The "Delta" is not yet completed, and has not yet been inflated with gas. As is usual during manufacture portions of the dirigible have been tested in various ways, and when completed all portions will have a proper margin of safety. During the voyage of the "Gamma" on September 22nd the pitching of the vessel broke a stay wire in the fore end of the frame, and the two fore bays of the frame buckled, but no further damage resulted, although the continued pitching was severe. There is nothing in these cases to require any further report.

SIR HILDRED CARLILE asked what use, in view of the adoption of aeroplanes by the War Office, is being made now, or is likely to be made in future, of the non-dirigible balloons owned by the Government?

COLONEL SEELY: Non-dirigible balloons are used for observation of fire.

SIR H. CARLILE: Are we to understand that we shall maintain and keep those that we have?

COLONEL SEELY: Yes.

MR. FELL asked if the dirigible balloon "Beta" has been taken out of its shed at Aldershot on any occasion during the past six months, and if the men who are to navigate it have been on the Continent to study the management and handling of dirigibles; and, if not, how is it proposed that they should learn their work?

COLONEL SEELY: The "Beta" has been out on several occasions during the last six months, and the men who are to navigate her are learning their work by such practice. They have not been to the Continent to study the management and handling of dirigibles.

MR. FELL: Would it not be very advantageous for them to go abroad to study for a bit, as they are making almost daily ascents in Germany and France very successfully?

COLONEL SEELY: I cannot admit that there is this superiority in knowledge in foreign countries. We have certain advantages of our own which are not possessed by any foreign country.

#### A Critic of Progress.

In his recent lengthy *critiques* on those who have been responsible for the agitation in favour of British aeroplanes, Mr. Massac Buist has doubtless intended to act as a salutary damper on the more strenuous agitators: to fulfil, in fact, very much the same function as does the empennage on an aeroplane.

Unfortunately, Mr. Buist, having of late been compelled to devote an undue proportion of his time to motor cars, seems to have lost touch with the trend of modern design, and to have omitted to note that the modern tendency is to decrease the damping effect of the empennage, and to give more effect to the elevator and rudder, while, at the same

time, giving what is left of the empennage a decidedly useful lift. If Mr. Buist would, in his damping criticisms, give some useful lift, he would be a more useful member of the agglomeration of warring elements which make up the aeroplane movement to-day. In his articles in the *Morning Post* Mr. Buist has quite omitted to recognise the fundamental basis of the whole agitation, namely, that unless aeroplane constructors receive support now, there will not be any aeroplane constructors when the country wants them. We have had at least one glaring example of the fact that even the best-equipped factory cannot copy foreign aeroplanes and engines without experienced men to superintend the details and do the actual work. The men who are building machines now, machines which are better built than any foreign machines, must not be allowed to disperse into other trades and forget what they have learned. Those of us who have led the agitation from the start—and *THE AEROPLANE* is proud to have been the originator of the agitation—do not, as Mr. Buist suggests, imagine a bombardment of London by foreign aeroplanes, but we do see very clearly, as Mr. Sandys points out in his much better informed articles, the destruction of our over-seas Striking Force owing to our generals being compelled to operate in the "fog of war" against an enemy who can watch our every movement. Must one again point out that this country has to-day only three efficient war-planes, only four officers to fly them, and that of those officers only three have any real cross-country experience?

#### German Experiments.

It is reported from Berlin that the experiments in dropping bombs which were commenced by the airship battalion at Tegel, near Berlin, were continued with two military airships at Cologne. Spaces were marked out on the ground as targets, the smallest being not less than 100 square metres in extent. In actual warfare the targets will, it is pointed out, be of greater extent—namely, gas works, railway stations, fortifications, camps, etc., so that the tests were considered to be fairly severe. When dropping the bombs the airships hovered over the targets at a height varying from 1,300 to 1,650 feet. The report says:—

"The actual results obtained are, of course, kept secret. It is only announced that experience goes to prove that airships are decidedly better adapted for dropping bombs than are aeroplanes. The latter, it is stated, are hampered in aiming by the greater speed at which they travel, and airships, moreover, can be operated in unfavourable weather."

If the German public believe these experiments to be of any use, they must be unusually simple. At 1,650 feet a dirigible could be knocked down at once by a high-angle gun. Obviously, "airships are decidedly better adapted for dropping bombs than are aeroplanes," always assuming that there is no wind, and that there are no fast aeroplanes about to frighten them away. The statement that "airships can be operated in unfavourable weather" is pure humbug, for there is not a dirigible in the world that dare show its nose outside its shed in a 30-mile-an-hour wind, and there are plenty of aeroplanes to fly in such a wind, especially if it is steady.



Mr. W. B. R. Moorhouse starting from Cambridge on his Blériot. Note the cased-in fuselage. Mr. Moorhouse finds that this casing makes the machine several miles an hour faster, and also prevents side-slip when banking, but it slows the controls somewhat, and so would make the machine less handy for racing round a pyloned course.



## AIR CURRENTS.

## Report of a Meeting.

The weekly meeting of the Maudlin Mutual Improvement Association was held under the joint auspices of the Happy Half Hours Society at the Welcome Hall on Thursday last, as usual.

The Vicar, in opening the meeting, said that aviation was so much the topic of the moment that he felt sure they would welcome the slight innovation of that night's lecture. Mr. E. Lastic had been an earnest student of the science for the last few weeks, and therefore knew considerably more about it than most of those present. ("Hear! Hear!" and "No!") A collection would be taken after the refreshments had been served. (Applause.)

Mr. Lastic said that one thing which had particularly struck him in beginning the study of this fascinating science was the fact that all aeroplanes were not alike. There were, for instance, monoplanes, biplanes, triplanes, and quadraplanes, and some had tails and some had not. This should not be overlooked by beginners.

Aeroplanes might be divided into two classes: Good aeroplanes and bad aeroplanes. Good aeroplanes were made on the Continent; bad aeroplanes were made in this country. (A voice: "Query!") There was no query about it. Was the interrupter aware that the entire aerial fleet of this vast nation consisted of Continental machines? Did he suggest that our Government knew nothing about aeroplanes? (The voice: "Yes!") Then he had nothing more to say. ("Hear! Hear!")

The characteristics of aeroplanes were two: (1) That they flew. (2) That they did not fly. The theory was that good aeroplanes flew, and bad did not fly. But most of the theories in connection with aviation had been over-ruled by experience, and the war authorities of this country were therefore taking a safe course in assuming that this one would be. None of the Government purchases had ever done much flying. Did anyone suggest that they were not the best obtainable? (A voice: "Yes!")

The chief objections to aeroplanes were also two: (1) That they were dangerous. (2) That they were illogical. The dangers of aeroplanes were constantly being diminished by various improvements; but those improvements were just as constantly upsetting some favourite bit of logic or theory, so that it could be safely said that aeroplanes were getting more illogical every day. They were essentially illogical. Logicians had long ago established satisfactorily that they were impossible—so much so that the point was now no longer argued. They were getting dangerously illogical. This was no laughing matter. Take, for instance, the two-seater aeroplane. That ought to be, if anything, safer than a one-seater. Instead of that, it was doubly dangerous, as, in the event of a serious accident, two lives were endangered instead of one. The three-seater was worse still. The safer an aeroplane ought to be, the more dangerous it got. There was something radically wrong here. If the gentleman who had just interrupted had studied the subject as long as he had, he would probably know more about it. ("Hear! Hear!")

The question was: Did we, as a nation, want waking up? ("No! No!" and "Votes for Women!") He had endeavoured to push some of the most illogical ideas ever heard of, without any success. They had all heard of the pendulum idea, as applied to lateral stability. ("No!") The drawback was that the pendulum reacted, like the pendulum of a clock. He had taken up an idea which utilised this drawback by converting the pendulum into a clock pendulum as well, so that the aviator could tell the time and how long he kept up. Would they be surprised to hear that when he had taken this to an influential quarter he had been told (to use the exact words) to "Lie low and say nothing," as it was "a waste of good time?" ("No!") There was a time for everything. Why not a timepiece for aeroplanes? It was true that in bad weather the violent movements of the pendulum caused the time to go quicker, but that was just what the aviator wanted. The idea was now receiving Government attention. ("Shame!")

Mr. Lastic then detailed this and other inventions (some parts of which were indistinctly heard in the reporters' quarter), and, having discussed at length the past, present, and future of aeroplanes, concluded with a rousing appeal to "Wake up!" Some members of the audience here seemed to be labouring under some misapprehension, and there was some confusion and cries of "What about the refreshments?"

The Vicar then rose and submitted the following resolution:

"That this meeting is of opinion (1) That, in view of its great historical interest, the present aerial fleet of the United Kingdom should at once be acquired for the British Museum before further damage is done to it, and (2) That, having regard to the comparatively backward condition of the English aeroplane industry, the Government should be encouraged to take no risks, but buy Continental machines as far as possible, as all the Continental Governments are doing."

The resolution having been unanimously carried, the Vicar said that he was not precisely cognisant of the point of the remarks embodied in it, but he was assured it was all right. ("Hear! Hear!") The refreshments would now be served. (Applause.)

T. A. G.

The criminal who referred to the tail of the Cody machine as the "codicil" is alleged to have defended his statement by referring to the word's derivation, from the Latin "*caudiculus*."

## The Phantom Aviator.

'Twas a beautiful night, with a misty sheen,  
(The yarn I am telling is true),  
A passing train was blowing off steam  
As by Brooklands track it flew;  
Away on the heath, in the shadows deep,  
All was peaceful, calm, and still,  
When a door was closed with a hasty bang  
At the club house on the hill;  
And three came forth in the bright moonlight  
For a wander down the vale,  
To talk of wondrous aeroplanes  
And to tell the oft-told tale.

They strolled on through the groves of pine,  
Through the light, and shadows black,  
And laughed and chaffed the time away  
Till they came to the big, broad track.  
The mist was slowly rising,  
When out of a cloud ahead,  
With a hiss, a swirl, and a curdling yell,  
A phantom quadraplane sped;  
They clutched each other in horror,  
And cried, as it passed, "Dear us!  
Who's flying around so late as this?  
'Tis the devil and his 'bus!"

They dropped upon the grassy slope  
And hid behind a thicket,  
To watch with awe and bulging eyes  
Old Harry take his "ticket,"  
They caught the whiff of a sulphurous smell  
As he passed them in full sail,  
And cut his figure-eights in style  
And spun upon his tail;  
They thought of the comfy club house,  
And wished that they were back,  
But some witchcraft seemed to bind them  
Beside that accursed track.

They saw Old Nick manoeuvring,  
Like a skater on his skates,  
As he slithered round the corners  
And tore along the straights;  
Then turning with a lightning sweep,  
He slewed across the track,  
Pouring out fire, and smoke, and flame  
In a Gilmouresque switchback;  
Then jerking the tail up skywards,  
Mid clamour and wild alarm,  
He disappeared, with a bang and a flash,  
Into the Sewage Farm.

They met at the club next morning,  
Though their heads belied their eyes,  
With a dim recollection of seeing  
That phantom in the skies:  
And told the yarn with due restraint  
To those whom they thought would stick it,  
Of that ghastly night on the Brooklands track  
When the devil took his ticket.

R. C. CROCKER.

# REPAIRS

To the Gnome or  
any other make of  
. . aero engine . .

Damaged engines rebuilt,  
and nothing but work-  
manship of the highest  
possible standard, by

**HESSE & SAVORY**

ENGINEERS

TEDDINGTON, S.W.

**SPEED,  
STABILITY &  
STRENGTH**

are the chief  
Features of



THE  
“**BRISTOL**”

**MILITARY (Two-seater) MONOPLANE**

which VALENTINE considers

**THE FINEST CROSS-COUNTRY  
MONOPLANE YET PRODUCED.**

TUITION may be had at the “BRISTOL” SCHOOLS,  
whose Efficiency is Proved by the Unsurpassed Results they  
have obtained.

For Terms, etc., apply—

**The British & Colonial Aeroplane Co., Ltd.,  
FILTON, BRISTOL.**

# ‘AVRO’

A 35 h.p. Green Avro Biplane  
carries passengers with ease for  
lengthy periods when fitted with

“AVRO”

## PROPELLERS.

Equally good results when fitted  
to your machine.

THE PROPELLER OF  
PROVEN EFFICIENCY.

**A. V. ROE & CO.,**

The Aviators' Storehouse,  
Brownsfield Mills, MANCHESTER.

# EFFICIENCY.

## BLERIOT MONOPLANES

The most successful 'aeroplanes in all the  
great Cross-country Races of 1910 and 1911.

## TUITION

AT THE ‘BLERIOT SCHOOL,’ HENDON

# £75

INCLUDING ALL EXPENSES: THIRD PARTY  
INSURANCE AND BREAKAGES (if any).

£10 returned to Pupil if he obtains  
his Pilot Certificate without Breakages

Passenger flights on Blériot 2-seater  
(70 h.p. Gnome motor) by arrangement.

Please address all enquiries to

**L. BLERIOT, BELFAST CHAMBERS,**  
56, Regent St., London, W.  
Head Office for the British Empire. **NORBERT CHEREAU,**  
General Manager.



## A Military Discussion.

### THE FIRST MEETING OF THE AERONAUTICAL SOCIETY UNDER THE NEW REGIME.

The first meeting of the Aeronautical Society under its new Council took place at the Royal United Services Institute on December 6th. It was altogether the most successful meeting ever held by the Society, and it certainly secured the biggest attendance within recent years.

The meeting had rather more than the usual importance of meetings of scientific societies, in that it may, to a very great extent, affect the whole future of the defence of this country, as it was specially organised to give army officers who take an interest in aviation an opportunity of discussing the military aeroplane with the constructors of these weapons, and several members of the General Staff at the War Office attended to make notes of the arguments.

General R. M. Ruck, R.E., who presided at Captain Burke's recent lecture, presided over the meeting, and did so with a tact and sympathy which should be a pattern to every-one occupying such a position. He pointed out the importance of the occasion, as it was, so far as he could recollect, the first time military officers had met in public discussion the makers of the weapons they were to use. He said that the time had now arrived when the importance of aeronautics was properly recognised. Of his own experience, he found that there had been during the last few months, and even during the last few weeks, a notable advance in general knowledge of the subject among those who had hitherto taken little or no interest in it. He congratulated the constructors of aeroplanes on their persistent efforts, and pointed out that on the doings of the next few months the future of British aeronautics would be judged. He drew particular attention to the fact that the War Office had prepared specifications for the forthcoming competition, but had not fixed upon them, and that, therefore, this discussion might have great results.

Colonel Capper, R.E., who opened the discussion, and who was, it will be remembered, a member of the old Council of the Society, said how much honoured he felt that he should open the first discussion under the new régime. He proposed to give an outline of his personal opinion as to the military aeroplane, not from the point of view of the military aviator, but from that of the commanding officer, and proceeded to state very lucidly what a commanding officer might require of his military aviators. He said that a commander should be able to depend on using his aeroplanes in almost any weather, and that the machines must be able to return to a given point. The aeroplane should be as immune as possible against injury by the enemy, and he thought that a practical machine could be made in six months.

#### Some Military Necessities.

It must be possible to see the surrounding country easily from the machine, and the machine must carry someone able to make notes of what he observed. It must be able to arise from ordinary grass land, though not necessarily from ploughed land or long hay. It must fly in a considerable wind, and it must be fairly easy to fly, for officers who might be called upon in time of war to pilot the machines would not necessarily be always in practice. It was important that the machine should be naturally stable. It must be able to stand rough usage, and it must be simple to keep in order. Also it must be able to stand exposure to the weather. It must also be speedy enough to get home without fighting. He did not think the ability to land in any rough spot anywhere was so important, for messages could always be dropped at any given point, even if the machine had to land elsewhere. It must also be able to rise rapidly above the level of artillery and rifle fire. He suggested also that it would be advisable to fit light armour over the vital parts. Machines might be forced into actual fighting, and there might be a time when, in order to prevent an enemy's aeroplane from getting back with important news, it might be necessary for a pilot to sacrifice himself in ramming a rival machine, and he thought men would be forthcoming for such a duty. It might, however, be better to give the enemy one's wash—which remark called forth considerable amusement, even from those who thoroughly understood the soundness of it.

Colonel Capper further remarked that, for offensive tactics, it would be important to have a clear field of fire to the front, which suggested that propellers might have some advantage over tractors.

General Ruck then called upon Captain Wood, of Vickers, Ltd., to give his views as a constructor. Captain Wood said

he thought an efficient landing chassis to be one of the most important things in a military machine. In the recent French trials only two machines had landed really well in the tilled ground. Silencing of the engine was also important, as he knew from experience of living close to the Brooklands Track. Hitherto aeroplane engines had had no power to spare, so it had not been possible to silence them, and so far as the rotary engine was concerned it was practically impossible to silence it.

Another important point was the ability to see from the machine. In this respect the biplane was certainly better, but he would like to have the views of officers who could speak with authority on the subject as to whether one actually wanted to see directly below one, or whether for observation purposes it was not equally good to see at an angle over the front of the machine. Another point on which constructors wanted information was the military view of the necessary radius of action, for on this depended the amount of petrol to be carried. The rate of climbing was also important, and in connection with this it is necessary to point out that the quickest climbers were not necessarily the most stable machines. He also wanted to know whether it was really necessary for military aeroplanes to carry a wireless apparatus. M. Maurice Farman had told him that he had made experiments with wireless on an aeroplane, but that they had not been very satisfactory. He drew attention to the fact that the Japanese were said to be considering fitting maxims guns on aeroplanes, and that in Tripoli fair service had been done with bomb-dropping from planes.

#### Practical Views.

Captain Broke-Smith, an officer of the Air Battalion, and a pilot of dirigibles who had evidently studied aeroplanes very keenly, said that he thought the military machine should be easily transported by road either on its own wheels or on a trolley, or on special road wheels substituted for its own wheels. In military aeroplanes all the parts should be interchangeable, to allow of quick repairs. So far as general design was concerned, details should be perfected and simplified, and the machines should not contain too many specialised parts. He had heard that the most efficient machines were the most difficult to fly. He thought dual control was important, although it assumed that the observer was able to fly in addition to the pilot. Machines should certainly be able to land on rough ground, and they must have a good gliding angle. As to seeing from a machine, he knew, from his dirigible experiences, that at a height of 2,000 ft. one could see troops two miles away. (This drew from an aviator alongside the present writer the remark that the eye must have a very bad gliding angle.) He thought that wireless in connection with aeroplanes was not of first importance until it had been further perfected. As to climbing, he thought a military machine should be able to climb 200 ft. per minute with two people on board and fuel for three or four hours. He believed that the most generally useful machine would be one to carry two persons: Three seaters, though they might be necessary, would be larger, and needed more power. A most desirable point would be to have variable speed, so that a machine could fly fast and land slowly, or, if necessary, could slow down in the air to make detailed observations at certain points. He did not, however, press this latter phase of variable speed, as from a considerable height he thought one could observe quite as well at high speeds as at low, and, at any rate, one could always circle round. As regards radius of action, his personal view was that a 60-mile radius would be sufficient. [By a 60-mile radius one may assume that Captain Broke-Smith means 60 miles on either side, or in front, i.e., the periphery of a semicircle of 120 miles diameter, which is roughly 180 miles, plus the 120 miles diameter, or about 300 miles in all.—Ed.]

Mr. Cody, who was heartily received, said he thought he had, during the last two days, convinced England that his machine could fly, now that it had been flown by somebody else. He emphasised the importance of silencing military aeroplane engines, and said that a military machine should get up to 1,000 ft. in four minutes, carrying half a ton of weight besides itself. It should be able to land safely on diabolical ground; that is to say, it should get off bad ground, and it should land on very, very bad ground. Its radius of action should be 20. to 300 miles. [In this case, no doubt, Mr. Cody means the machine should be able to cover between 200 and 300 miles without descending.—Ed.] This country should

have better machines than any in France. The question of conveyance by road was not important if the machines were reliable, and could be flown in a bad wind. Simplicity of repair was most important, and no machine flying at less than 60 miles per hour was the slightest use.

#### The Man of Experience.

Captain Burke, who is known to be one of the cleverest flyers in the Air Battalion, said that, going a step further than Captain Wood, information as to the visibility of the machine from the ground would be useful. He had watched a machine go out of sight in five minutes, so that evidently at 60 m.p.h. a machine could disappear in five miles. In the French trials the speed of the successful machines varied from 40 to 72 m.p.h. The Nieuport single-seater does 80 m.p.h., and the Maurice Farman machines had done 40 m.p.h. for eleven hours without landing, which gave one an idea of the two extremes. Now a commander who wanted to know where great masses of the enemy were concentrated would instruct the commandant of his aeroplane section to find out. The commandant would send out his fastest single-seater, having a range of 100 miles out and 100 miles home. He could observe the big masses of troops and mark the points on a map fastened on his machine. For such services the fastest possible machine would be required. It should be able to travel 100 miles out and 100 miles home, with 50 miles left over for emergencies. It should fly at a height of at least 3,500 ft., but its climbing speed was not so important. As to its equipment, the solitary pilot could not use glasses, but he might make notes, and he must avoid fighting, for much would depend on the machine getting back. Such machines should have the means of flying at night, for finding great military concentrations it would be advisable to fly to well-known railway junctions and note whether large numbers of troop-trains were coming through during the night.

The officer commanding, having learned where the big masses of troops were concentrated, would then want further details. In this case a second observer would be needed, and duration would be important, owing to the time spent in circling round and round when making observations. When a big action was actually being fought a third person would also be wanted, for the strain of piloting a machine for, perhaps, four hours on end would be too great for one man, and a relief pilot would be needed.

#### The Machine of To-day and Yesterday.

Mr. Dunne, of automatic stability fame, speaking as a constructor, said that he thought different types of machines were necessary for different purposes. It was really essential that military aeroplanes must go whence, whither, and when required. Two years ago it would have been good if a machine could have flown one day a week, and then one could not say which day. Nowadays, a machine should be able to fly practically every day. He thought that quick rising was not so important as other qualities. A radius of action of 100 miles was very necessary, and to give perfect reliability a second engine was important. What designers wanted to know was whether the position of the propeller was important from the military scout's point of view.

Colonel Stone, R.A., said that he thought a number of types were necessary—certainly two types were. For reconnaissance work stability was the chief essential, for the machine must take the air at all times, landing and starting under any reasonable conditions. But one man in an aeroplane could act as a destroyer against reconnoitring machines, and his machine must be very fast and nimble. The fighting machine must be fast, and it must climb quickly, but it might be difficult to handle. On the other hand, a reconnoitring machine should be easy to fly. The actual pilot need not be trained for reconnaissance work, but if he knew something about it, so much the better. The observer, on the other hand, must be trained for that purpose, though he might, with advantage, be an amateur pilot, so as to relieve his companion. Speaking as a gunner, he said that we wanted to be able to attack this new arm from land. Therefore, he would like to see an automatic aeroplane built, for use on ranges out at sea, so that gunners could use it as a target.

Mr. A. R. Low, of Vickers, Ltd., remarked that in the short intervals during the discussion he had been working out a few equations. He found that if he were designing a single-seated machine for an 8-stone pilot, and built it on the stick-and-string principle, he could produce it at a weight of 500 lbs., and in efficiency it would be 50 per cent. better than a similar machine built for a 14-stone pilot. If the authorities insist on having a solidly-constructed machine it would weigh a thousand pounds. If they wanted variable speed, he would have to add another 50 lbs. His chief, Captain Wood, liked

to have compasses, speed indicators, clinometers, revolution counters, and so forth, and these also added weight. If they required floats in case of descent in water more weight would be added. If they wanted a wind screen for the pilot, that put on more weight, so that by the time he had designed a machine to satisfy all the requirements of everybody who had practical ideas on the subject, a three-seated machine carrying wireless apparatus and some armament would weigh probably a matter of 5,000 lbs., instead of 500 lbs. Therefore, if they wanted light, easily transported machines, he besought them to insist on the most extreme simplicity.

Colonel Rawson related incidents from the South African war in which an aeroplane would have been useful, including one occasion on which it took twelve hours to transport 48 lbs. of dynamite about 25 miles. (The aviators present did not seem particularly to relish the idea of carrying 48 lbs. of dynamite under any circumstances, warlike or otherwise.) Colonel Rawson said he thought the aeroplane ought to be able to pick up light parcels in a manner similar to that adopted by a mail train in picking up letter-bags.

In closing the meeting under the time limit, General Ruck remarked how interesting the whole discussion had been, and said that, so far as he could gather, the General Staff thought that more than one type would undoubtedly be necessary.

Needless to say, before dispersing, the audience passed a most hearty vote of thanks for the altogether adequate way in which General Ruck had presided over the proceedings from start to finish, and it is to be hoped that these discussions between different sections of those interested in aviation will be made a special feature of the Aeronautical Society under its new and evidently far-seeing council.

It is exceedingly gratifying to hear from Mr. T. O'B. Hubbard, the secretary of the Aeronautical Society, that those gentlemen who were unable to speak at this first meeting owing to the time limit will have a further opportunity of doing so at a renewal of the discussion, which will take place on Monday next, December 18th, at the Royal United Services Institute. Major-General R. M. Ruck will again preside, and several naval officers have promised to attend and take part in the discussion.

Everyone who was unable to be present at the last meeting should make a special effort to be there on this occasion, for officer-aviators and prospective officer-aviators will certainly learn much from the constructors and constructors will learn more about what the men who are to use their machines require in an hour or two listening to the discussion than they would in weeks under ordinary circumstances.

#### Mr. Sandys on Military Aviation.

A second capital article on "The War Office and Aviation," by Mr. G. J. Sandys, M.P., appeared in the *Morning Post* on Saturday last. It is too long to quote, but it should be noted that Mr. Sandys agrees practically *in toto* with every argument used by *THE AEROPLANE* on this subject. He lays particular stress on the fact that we have been on the verge of war three times in the last six months, and that our troops would have been running the risk of almost certain disaster owing to our totally inadequate provision of aeroplanes and trained officers. He also makes the important point that the Air Battalion should be entirely apart from the Royal Engineers, as has been stated with much emphasis in *THE AEROPLANE*. One feels inclined to disagree with Mr. Sandys when he says: "In order to make up deficiencies at short notice, a preliminary purchase of foreign-built machines may be advisable." As a matter of fact there are at present half a dozen British manufacturers who can supply military aeroplanes more quickly than any foreign constructor, and who will supply actually better built machines, built of better material. Mr. Sandys uses the phrase "If we develop the British industry and an efficient British-built military machine is evolved." It seems, therefore, necessary to point out that these "efficient British-built military machines" already exist, and can be turned out very much more quickly than pilots can be trained to fly them. Mr. Sandys has done much good work in the House of Commons for British aviation, and it is a pity he should be guilty of two such errors as those quoted, though they are doubtless due to his busy life preventing him from seeing the latest productions at work at Brooklands, Eastchurch, Salisbury Plain, and Huntingdon.

#### Another German Killed.

Herr Reeb, while flying from Munich to Nuremberg on December 3rd, fell, close to Breitenfurt, in Middle Franconia, and was killed on the spot.



NO PART OF THIS ISSUE HAS BEEN OR WILL BE UNDERWRITTEN.

*A Copy of this Prospectus has been filed with the Registrar of Joint Stock Companies as required by section 80 of the Companies (Consolidation) Act, 1908.*

The Subscription List will open on Monday, the 18th day of December, 1911, and close on or before Wednesday, the 20th day of December, 1911.

THE

## Scottish Aviation Company, LIMITED.

*(To be incorporated under the Companies (Consolidation) Act, 1908, whereby the liability of each member is limited to the amount of his Shares.)*

**SHARE CAPITAL, £10,000.**

Divided into 40,000 Shares of 5/- each.  
There are no Preferred or Deferred Shares.

### ISSUE OF 20,000 SHARES.

of which 4,000 will be issued to the Vendors as fully paid in part payment of purchase price

AND

16,000 Shares of 5/- each are now offered for Subscription at par.

PAYABLE AS FOLLOWS—

1/- per Share on Application.

2/- per Share on Allotment.

2/- per Share Two Months after Allotment.

The balance of 20,000 Shares are reserved to provide further working capital, and are subject to the option for a period of three years to the Vendors to take 10,000 Shares or any less number at par.

### Directors.

WALTER GRAY DUNCAN (late Honorary Secretary of the Scottish Aeronautical Society, and Joint-Manager of the Lanark International Aviation Meeting, 1910), 185, HOPE STREET, GLASGOW, *Chairman.*

COLONEL THOMAS RAMSAY, V.D., 1, ST. JAMES' PLACE, HILLHEAD, GLASGOW.  
WILLIAM MACNAB, DUNTERLIE, BARRHEAD, ENGINEER (retired).  
JAMES CLINKSKILL, 1, HOLLAND PLACE, GLASGOW, ENGINEER.  
A. V. ROE, BROOKLANDS, SURREY, and BROWNSFIELD MILLS, MANCHESTER, AERONAUTICAL ENGINEER and PILOT AVIATOR.  
FREDERICK NORMAN, 185, HOPE STREET, GLASGOW, AERONAUTICAL ENGINEER, *Managing Director.*

### Honorary Advisory Committee.

JOHN RICHARD KIDSTON LAW, 20, ASHTON GARDENS, GLASGOW, IRON MERCHANT.  
WILLIAM CRAIG POLLOCK, LAIGH PARK HOUSE, GIFFNOCK, ENGINEER.  
COLONEL JOHN ALEXANDER SILLARS, THISTLE WORKS, CAMPBELL STREET, GOVAN.

### Bankers.

ROYAL BANK OF SCOTLAND, EXCHANGE SQUARE, GLASGOW, EDINBURGH, and Branches.

### Solicitor.

J. OSWALD CAMPBELL, 65, BATH STREET, GLASGOW.

### Auditors.

TURNER & HOUSTON, C.A., 173, ST. VINCENT STREET, GLASGOW.

**Secretary** (pro tem.) and **Registered Office** (pro tem.)  
T. H. CAMPBELL, JR., 65, BATH STREET, GLASGOW.

## PROSPECTUS.

### OBJECTS.

THIS Company has been formed for the purposes stated in the Memorandum of Association, and more particularly to carry on the business of Manufacturers of Aeroplanes and all Accessories and Appliances relating to aerial navigation, to conduct a School of Aviation, and to promote and organise public and other aviation meetings.

### PROPERTY ACQUIRED.

The Company will take over as a going concern, as from the 11th day of November, 1911, the property known as the Barrhead Aerodrome, held on lease by The Scottish Aviation Company, the Vendors to this Company. The Aerodrome is situated in Barrhead, and is distant about five miles from Glasgow, and is easily accessible from all parts of Glasgow by both train and car. The Aerodrome consists of fully 60 acres of land at present held under lease from the Proprietors of Parkhouse Estate, Barrhead, for five years from the term of Martinmas, 1911.

Expenditure has been incurred in adapting the property for the purposes of an Aerodrome, and in the erection of Hangars, etc., and it is claimed that the property now forms the finest Aerodrome in Scotland.

## SCHOOL OF AVIATION.

There are already a number of pupils at the Barrhead Aerodrome. In order, therefore, that no time may be lost in continuing and extending the School of Aviation, the Scottish Aviation Company have agreed to sell all the Aeroplanes and Accessories at present belonging to them in the Barrhead Aerodrome for the sum of £1,600. A valuation has been prepared of these Aeroplanes and Accessories by Messrs. W. and S. Pollock and Company, Engineers, 34, Robertson Street, Glasgow, at the sum of £1,610 10s. This exceeds the price which the Company is giving for them by the sum of £10 10s. The Company will acquire the services of Mr. Frederick Norman as Managing Director for a period of three years.

## RELIABLE TYPES OF AEROPLANES AND FLYING MACHINES.

The Aeroplane has now reached a stage when its utility and efficiency can no longer be called in question. An agreement has been entered into with Messrs. A. V. Roe & Company, Aeronautical Engineers, of Brooklands, Surrey, and of Brownsfield Mills, Manchester, whereby the Company have received the sole right for Scotland to build the "Avro" Aeroplanes. The "Avro" Biplane is undoubtedly one of the most successful British Aeroplanes. The Directors consider that the possession of this Licence will be of great advantage to the Company, as it puts the Company in a position to immediately manufacture a reliable type of Aeroplane without incurring the cost of experimenting.

## MILITARY AEROPLANES.

Arrangements have been made with the General Officer Commanding-in-Chief, Headquarters, Scottish Command, Edinburgh, with regard to the Training of Officers in Aviation, and the subvention of officers to undertake a course of Aviation instruction at the Barrhead Aerodrome. This recognition by the Authorities of the School will give it a standing and prestige which will have a beneficial effect in attracting other pupils.

In addition, all Military Officers will be appointed to fund tuition at reduced fees, and as the number increases this will automatically establish a growing market for Aeroplanes manufactured by the Company, with the working of which these officers will be familiar.

## HONORARY ADVISORY COMMITTEE.

An Honorary Advisory Committee has also been appointed, consisting of John Richard Kidston Law, William Craig Pollock, Colonel John A. Sillars, and Robert Robson Speirs, J.P., whose expert knowledge and great commercial experience will be at the call of the Company.

### PUPILS.

At the present time there are a number of pupils being instructed at the Aerodrome, and a considerable income is confidently anticipated by the Directors, looking to the previous experience of other schools both in England and abroad. It has been arranged that shareholders will receive aviation instruction at specially reduced fees.

## PUBLIC AVIATION MEETINGS.

The Aerodrome at Barrhead is admirably adapted for exhibitions of flying, and its near proximity to such large centres of population, together with its ease of access, make it extremely probable that a considerable income will accrue to the Company from large gatherings of the public. In estimating the amount to be derived from this source an extremely low average has been taken.

## ESTIMATE OF PROFITS.

The following is an estimate of the probable earning capacity of the Company during the first year. No account is taken in this estimate of the revenue which should be received by the Company from exhibition flights and meetings at places other than the Company's Aerodrome, the sale of motor spirit and oils, motor garaging, refreshment catering, advertisements, etc., and from other miscellaneous sources, from which a considerable profit is expected to accrue. The Directors consider the following a moderate estimate of revenue, and that the Company's sale of aeroplanes after the first year will be greatly in excess of the number mentioned below:—

### ESTIMATED REVENUE.

10 Aeroplanes at an average net profit of £75 each	£750
Profits on sale of Aeroplanes, flying machines, and accessories	350
Annual gate receipts at Aerodrome—	
20,000 at 6d. per head	£500
5,000 at 1s. per head	£250
20 pupils at a minimum fee of £30 per pupil	750
Rental from 6 Hangars at £50	600
Percentage of winnings of Company's pilots	360
Fees from passenger flights	150
	300
	£3,260

## ESTIMATED EXPENSES.

Rents, rates, insurance, Directors' fees, salaries of Managing Directors, Mechanics, Aviators and Instructors, Secretary, advertising, petrol spirit, and contingencies.	2,000
--	-------

Estimated net annual profit

On the basis of the above figures, the worst result, after paying £500 to reserve, a sum more than sufficient to pay a dividend of 15 per cent. on the whole of the Share Capital of this issue.

## PURCHASE CONSIDERATION.

The consideration payable to the Vendors as set out in the contract hereinafter mentioned is £1,600 payable as to £500 in cash, and as to the balance of £1,100 in fully-paid Shares. Nothing is being paid for goodwill.

The preliminary expenses are estimated at £400. After payment of these sums the Directors will have a balance in hand out of the Share Capital now offered for subscription of £3,000, which they consider sufficient to make further additions to the works, purchase new aeroplanes, and provide working capital.

The minimum subscription on which the Directors may proceed to allotment is, in terms of the Company's Articles of Association, £500.

**CONTRACTS.**

The following Contracts have been entered into:—

- (1) Contract dated 1st December, 1911, between the Scottish Aviation Company, 185, Hope Street, Glasgow, the vendors and promoters of this Company, on the one part, and John Edwardes Young, 65 Bath Street, Glasgow, Trustee on behalf of the Company of the other part, whereby the first party agree to sell to the Company their Aeroplanes and accessories, tools, stock, engines, etc., as per inventory, and hangars at the Barhead Aerodrome belonging to them, and agree to assign the lease of the said Aerodrome, recently held by them, to the Company, for the consideration of £1,600, payable as to £500 in cash, and as to the balance of £1,000 by the allotment to the first party of 4,000 fully paid shares of 5s. each.
- (2) Contract, dated 7th December, 1911, between A. V. Roe & Company, Aeronautical Engineers, of Brooklands, Surrey, and Brownsfield Mills, Manchester, on the one part, and the said John Edwardes Young, as Trustee on behalf of the Company, on the other part, whereby the first party license the Company to manufacture their "AVRO" Aeroplanes on plans and designs supplied by them, on payment of a sum of £30 for every complete aeroplane manufactured under their plans.

Messrs. W. G. Duncan and James Clinkskill, two of the Directors, and Mr. Frederick Norman, the Managing Director, are interested in the purchase consideration payable to the Vendors in respect of Contract No. 1, as partners of the firm of the Scottish Aviation Company, each to the extent of one-third.

Mr. A. V. Roe, one of the Directors, is interested in, contract No. 2, as a partner of the firm of A. V. Roe & Company.

**DIRECTORS' QUALIFICATION AND REMUNERATION.**

The provisions of the Articles of Association in regard to the qualification and remuneration of the Directors are as follows:—

- (64) Unless otherwise determined by a General Meeting the number of Directors shall not be less than two nor more than eight. The first Directors shall be Walter Gray Duncan, 185 Hope Street, Glasgow; Colonel Thomas Ramsey, V.D., 1 St. James' Place, Hillhead, Glasgow; William MacNab, Dunfermlie, Barhead, Engineer; James Clinkskill, 1 Holland Place, Glasgow; Engineer; A. V. Roe, Brooklands Surrey, and Brownsfield Mills, Manchester, Aeronautical Engineer and Pilot Aviator; and Frederick Norman, 185 Hope Street, Glasgow, Aeronautical Engineer.
- (66) The qualification of a Director shall be the holding of shares of the Company in his own right of the nominal amount of £50, upon which all calls for the time being due shall have been paid or held to be paid, and if not already qualified he shall acquire the same within two months of his appointment.
- (70) Any casual vacancy occurring in the Board of Directors may be filled up by the Directors, but any person so chosen shall retain his office only until the next Ordinary Meeting at which a Director or Directors fall to be elected, and shall then be eligible for re-election.

- (75) The remuneration to be paid to the Directors shall be fixed and determined by the Shareholders at the Ordinary Annual Meeting of the Company. The Directors may also be repaid such travelling, hotel, and other expenses necessarily incurred in connection with the business of the Company.

**GENERAL.**

Copies of the Memorandum and Articles of Association, and of the above-mentioned Contracts together with the Reports and Valuation referred to, can be inspected at the offices of the Solicitor on any business day before the closing of the Subscription List, between the hours of 11 a.m. and 4 p.m.

Prospectuses and Forms of Application can be obtained from the Bankers, Solicitor, and Auditors, and at the Offices of the Company.

Applications for shares can be made on the form attached, and forwarded to the Company's Bankers with the amount of the deposit. Where the number of shares allotted is less than that applied for, the balance of the deposit will be applied towards the allotment money.

Failure to pay any instalment will render all previous payments liable to forfeiture.

**FORM OF APPLICATION.**

No. A.....

**THE SCOTTISH AVIATION CO., LIMITED.**

To the Directors of

THE SCOTTISH AVIATION COMPANY, LIMITED.

GENTLEMEN,

Having paid to the Company's Bankers the sum of £....., being a deposit of 1s. per share on Application for ..... Shares of 5s. each in the above-named Company, I request you to allot me that number of Shares upon the terms of the Company's Prospectus filed with the Registrar of Joint Stock Companies and of its Memorandum and Articles of Association, and I agree to accept the same, or any smaller number that may be allotted to me, upon the terms of the said Prospectus and Memorandum and Articles of Association, and I authorise you to register me as the holder of the said Shares.

Name (in full).....  
(Mr., Mrs., or Miss)

Address (in full).....

Description.....

Signature.....

Date....., 191

PLEASE WRITE DISTINCTLY.

All Cheques to be made payable to the Company's Bankers, The Royal Bank of Scotland, Glasgow, Edinburgh, or any of its Branches.

**SOUTH EASTERN AND CHATHAM RAILWAY.**

# Aeroplane Exhibition in Paris

## REDUCED RATE TICKETS

### LONDON—to—PARIS

Will be issued on December 21st, 22nd, 23rd and 24th

Via  
**Dover & Calais**

And

Via  
**Folkestone & Boulogne**

(Sea Passage 60 to 80 minutes).

1st Class—**58/4**2nd Class—**37/6**3rd Class—**30/-**

AVAILABLE 15 DAYS.

For full details, together with particulars of the Ordinary Fares and Services, apply to Continental Traffic Manager, S.E. & C.R., London Bridge Station, S.E.



## The Week's Work.

Monday, December 4th.

BROOKLANDS.—Wilkins and Sabelli out on Deperdussin, latter now doing curves. Raynham on Avro-Viale going strong. Kemp on Vickers coming up well. H. Blackburn getting Walton-Edwards Colossoplane to lift well. Pizey on Bristol teaching Captain Raleigh and Captain Weeding. Garne doing straights and then 2½ circuits. Lieut. Longcroft, after some straights, forgot to flatten out for landing and flew right into ground. Skids forced right back without breaking. Longcroft pitched out on his face. Elevator completely carried away, and biplane proceeded to stand completely on its head with tail in the air, in attitude more familiar in early monoplanes. Fortunately top plane held together, so machine did not turn over on top of him, and he had splendid luck in escaping with a bruised face instead of a broken neck. Similar accidents with pilot behind engine usually do even less damage. In evening Pizey up with Captain Raleigh, Captain Weeding, and Lane.

HENDON.—All Blériot pupils practising; Allen, Dessoutter, Prensell, and Sacchi now making circular flights. Briere also progressing.

EASTCHURCH.—Ogilvie out on "N.E.C."-engined Wright, making exceedingly fine flights in strong wind. Machine showed great climbing power, finding no difficulty in rising to a height which, by careful judgment, could not have been less than 1,500 feet during one circuit of the aerodrome. Lieut. Gregory also flying in afternoon, this being first time out since recent illness, and all were glad to see him back again. By way of showing that he had not lost any of his old flying form, he flew to Sheerness Harbour and back, circling round H.M.S. *Actæon*. Returning, he put in some fine practice over aerodrome, making exceedingly neat turns, banking his Short biplane in most expert style. S. P. Cockerell and V. A. Barrington-Kennett, both of Territorial Balloon Company, put in first practice under J. L. Travers' guidance on 70 h.p. Short biplane. Cockerell already has R.A.C. certificate, and, judging from first performance at Eastchurch is cut out for really good flyer. Barrington-Kennett had first experience of piloting from passenger's seat of new machine, on which, owing to special dual control, pupil is able to take charge at will of instructor.

SHOREHAM.—After the 100-mile-an-hour gales which had been forecasted for this seaside aerodrome, Chanter School delighted to find, after eight days' perfect flying weather, there was yet more in store, for to-day opened fine and calm, and De Villiers turned up and put in some excellent rolling practice.

THE PLAIN.—Flying only possible in afternoon. Lieut. Borton and Lieut. Porter each made twenty minutes' solo, and Smith Barry, an ex-pupil, made fifteen minutes' solo. Busted made two solos on a single-seater monoplane, and subsequently Pixton, on another of same type, flew out to Fargo and back.

Tuesday, December 5th.

BROOKLANDS.—Bell did good test flight on new Martin-Handasyde, and immensely pleased with machine. Gilmour out later on same, performing in usual startling way. Raynham flying better and better on Avro-Viale. Spencer out with last passenger. Blackburn on Colossoplane did good circuit. Lieut. Parke, R.N., arrived from Farnborough on Cody biplane, flying well, and went back after short stop. Kemp again out on Vickers, handling machine beautifully. In afternoon Fleming up with Capt. Raleigh and Warren, and Pizey up with Capt. Weeding and Lane.

HENDON.—Blériot pupils continuing practice.

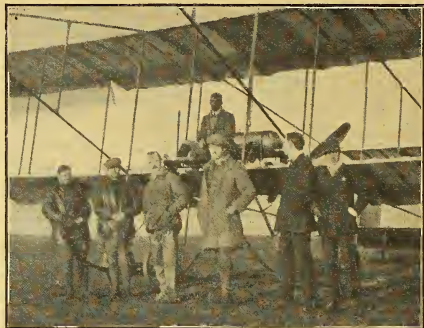
EASTCHURCH.—Cockerell and Barrington-Kennett, of Territorial Balloon Company, again out on 70 h.p. dual-control Short biplane, with J. L. Travers as instructor, doing well and showing great promise.

SHOREHAM.—Again calm, and De Villiers put in fine steady straight flights. Afterwards Gassler out, doing straight flights till dusk.

THE PLAIN.—In afternoon England, Jullerot, and Busted each up solus, but soon forced down by wind.

Wednesday, December 6th.

BROOKLANDS.—Chattaway, after long run of bad luck with weather and engine, got through second part of certificate flights and did his height test, all in excellent style, being good pilot to take his first flight on Deperdussin. Sabelli, making good progress, did good right-hand circuit. Then Lieut. Wilkins, R.N., up till then doing well, took brevet machine out and wrecked it very completely. Kemp, going splendidly



At Brooklands.—Left to right: Garne, Pizey, Capt. Gordon, Lieut. Longcroft, Fleming, and Warren. On the machine is Major Benwell. At the present moment there are eight pupils at the Bristol School.

on Vickers, went out over Golf Links and came down with fine glide from 1,000 ft., owing to one cylinder missing. Raynham, in good form as usual, on Avro-Viale. Blackburn doing straights on Colossoplane. Spencer up with passenger. Gilmour up with Charteris, of A.B. Engine Company, as passenger, intending to go to Aldershot, but too windy. Lieut. Snowden-Smith looking very unlike victim of accident reported in dailies last week, flying well, as also Blondeau, with passenger, on older Blondeau-Hewlett biplane. Fleming up with Warren, going high and coming down in spiral glide. Pizey teaching Capt. Raleigh. Lieut. Longcroft doing straights, apparently none the worse for smash except for monumental black eye. Congratulations on pluck in starting so soon after. Fleming then out with Raleigh, Garne, and Lane.

HENDON.—Prensell, Dessoutter, Sacchi, and Welburn out all day on Blériots. Ridley-Prentice took out Green-engined Valkyrie, and flew circuits, with very sharp turns and splendid banking, eventually landing in front of the sheds with well-judged glide. Chambers immediately mounted same machine and flew numerous circuits, in spite of gusty breeze. He was flying exceedingly well, but it was still too foggy to allow him to make his second test flight for his brevet. Later in the afternoon Capt. Loraine came out on the Valkyrie racer and accomplished a fine flight of twenty minutes' duration, the fog, however, preventing any attempt at high altitudes.

In afternoon Liles took out Grahame-White biplane, and rolled for some minutes, but had to give up owing to fog, and none of other pupils had practice, for same reason.

SHOREHAM.—Gassler out again all morning. THE PLAIN.—Ideal flying day; thirty-two flights made by school. Lieuts. Borton and Porter, who promise to become very clever flyers, each flew solo for an hour. Lieut. Wyness-Stuart, ex-pupil, did some practice, flying on school machine. Jullerot busy, first taking up Mr. Stanley White, managing director of Bristol Co., and afterwards Capt. Agostini, of Italian Army. Jullerot's next performance was his first attempt on a monoplane. He flew very well, and, he says, without any effort, for about ten minutes, landing smoothly.

Gordon England took up Mr. Stanley White, for forty minutes' flight in neighbourhood of Salisbury town, afterwards taking Farnall Thurston, who took photographs from passenger's seat. After this Hotchkiss up with England, who made fine exhibition flight. Busted took up Lieut. Porter, and afterwards made solo on single-seater monoplane, showing he is now a perfectly competent monoplane flyer. Pixton made one solo on biplane and two on single-seater monoplane, performing some very fine glides. After Hotchkiss had taken Lieut. Porter on No. 66, Valentine took Capt. Agostini on two-seater military monoplane. Valentine afterwards took his mechanic, and then made a solo, his landings being remarkably fine. Jullerot took Lieut. Ministry of Air Battalion, for biplane flight, afterwards making solo, which included some pretty figure eights. Pixton took Prier as passenger on biplane,

what time Busted, in spite of cross-wind, was getting marvellous turn of speed out of single-seater monoplane over the 5-km. course. Solo by Pixton on single-seater monoplane concluded day's work.

**EASTCHURCH.**—V. A. Barrington-Kennett (London Territorial Balloon Company) made first solo flight on Short 70 h.p. biplane. After straight flight he rose to height of about 70 ft., and made very neat left-hand turn.

#### Thursday, December 7th.

**BROOKLANDS.**—Wind and rain. No flying. Pizey off to Salisbury Plain to learn to fly Bristol monoplane.

**FARNBOROUGH.**—Accident to Cody machine very much over-estimated by daily papers, as usual. Lieut. Parke, R.N., with passenger, and petrol and oil for six hours, started for Mortimer-Singer prize. Machine loaded to full limit. Got off well and climbed all way down Laffan's Plain; then turned towards Balloon Factory to make for railway line, Andover being the turning-point. Machine turned all right, but doing so brought wind right astern, and machine dropped, pending picking up speed. Instead of landing at once, not knowing this part of ground, pilot tried to force her to climb, hoping she would pick up speed before getting too close to ground; then saw he must get into trees if he held on, so steered a little to right. Owing to being at full climbing angle and having heavy load, machine a bit slow in answering; so pilot landed as best he could, switched off engine, and pancaked about 20 ft., machine landing absolutely square and down by the nose, at about proper gliding angle, so that another 10 ft. would probably have saved any accident, but for machine coming down among bushes. Pilot shot out and rolled over unhurt, thanks to helmet taking shock of wires, etc. Passenger remained in seat, also unhurt. Cody naturally annoyed at accident, but, as usual, most philosophical. Pilot very annoyed with himself, in spite of fact that, on any reasonably decent ground, accident could not have occurred. Elevators and planes somewhat damaged, but, as usual, chassis and central section of machine apparently unbreakable. Everyone wishes better luck next time.

**HUNTINGDON.**—W. R. R. Moorhouse flew to Market Harborough. Leaving at 12.15, he arrived at Harborough at one o'clock. Just as he was alighting on Harborough cricket field sudden gust of wind tilted machine nearly over. Moorhouse unhurt, but machine so damaged that further flying impossible.

#### Friday, December 8th.

**BROOKLANDS.**—Raynham out on Avro-Viale, and Sippe on same machine making good circuits. Gilmour doing usual fine flying on Martin-Handasyde, with Handasyde as passenger. Fleming out with Capt. Weeding, Lieut. Longcroft, and Warren and Garne, all taking control.

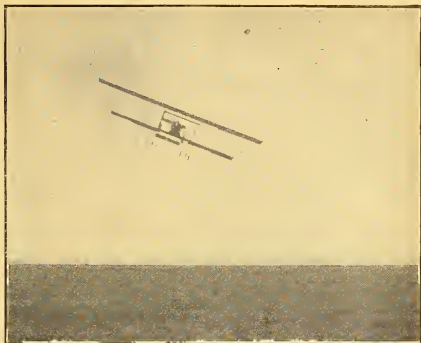
**THE PLAIN.**—Jullerot made flight with Bendall, Pizey taking Lieut. Ashton twice. Pixton made circuit on two-seater military monoplane, and Busted circuit on single-seater. Rain and wind all afternoon and evening.

**HENDON.**—Fog prevented much practice, but Fowler out in morning doing much-improved straight flights, with well-judged landings on Grahame-White biplane.

#### Saturday, December 9th.

**BROOKLANDS.**—Raynham out a.m. and p.m. on Avro-Viale, machine lifting splendidly and showing excellent form generally. Right or left turns apparently equally easy. Evidently a good combination. In afternoon Blackburn doing straight in nasty wind on Colossoplane. Spencer passenger-carrying, as usual. Fleming up with Capt. Weeding, Lieut. Longcroft, Garne, Lane, Warren, and Smith, a new pupil. Sippe on Avro-Viale flying splendidly, high up, at Byfleet side of track, and doing right-hand turns in style. Gilmour, on Martin-Handasyde, doing surprising things in way of banking and diving. May be safe enough for him, but others are not recommended to try to imitate him. During day Jack Humphreys' monoplane, familiarly known as "the Elephant," inspected by gentlemen locally reported to be "War Office experts." As machine has never flown, it should be useful model to copy. Pity they don't inspect modern British flying machines. All British Engine Company, Ltd., now installed in big brick workshop. Intention of Ronald Charteris, chief of firm, to undertake all kinds of repair work for aeroplanes or cars. Being right on the spot, should have excellent opportunities. The A.B. engine itself looks like being a good thing.

**EASTCHURCH.**—Alec Ogilvie out on the N.E.C.-engined Wright, flying in very strong wind. Frank McClean also out on Short twin-engine machine, and took up several passengers. At one time Ogilvie, at some five or six hundred feet, ap-



A typical Pizey-and-Fleming "bank" at Brooklands.

peared, from ground, to be quite stationary, having apparently struck very fast current of air from south-west.

#### Sunday, December 10th.

EVERYWHERE.—Gales and rain. Nothing doing.

#### At Eastchurch.

On Sunday, December 3rd, Mr. Jezi was out on his new biplane, and made some excellent flights. Since previous week he had made some further improvements in the machine, particularly in giving a deep streamline form to the main chassis struts, and also to the fuselage, which is now completely covered in, and is joined in a gradual taper from the pilot's shoulders to the tail plane, reminding one somewhat of the Bréguet. When flying, the machine presented a very neat appearance, and behaved exceedingly well. Lieut. Dunne was also making straight flights during the day.

#### The Aeronautical Society of Great Britain.

*Election of the First Associate Fellows.*—Members are informed that the application forms for Associate Fellowship of the Society are now ready and can be obtained on application. It is particularly requested that intending candidates should send in their applications at their earliest convenience, but in any case not later than December 31st, 1911. This first election will be conducted in accordance with Rule 5 (a), to which particular attention is drawn.—I. O'B. HUBBARD, Secretary, 53, Victoria Street, Westminster, London, S.W.

#### The First Territorial Aviators.

In a recent issue of THE AEROPLANE it was stated that Mr. Seymour Metford was the first Territorial officer to get his Pilot's Certificate. This information should have read that he was the first Territorial officer to get his certificate on a monoplane. As a matter of fact, the honour of being the first Territorial officer to get an aviator's certificate belongs to Mr. W. Lawrence, who took his certificate on a Bristol biplane on Salisbury Plain.

#### Mr. Hamel in Good Company.

The Royal Societies Club, founded in 1894, held its annual general meeting at the Club-house in St. James's Street, on Friday last, when Lord Halsbury was re-elected president of the club. The Archbishop of York has accepted a vice-presidency, and all the recipients of the Order of Merit since its institution have accepted honorary life membership of the club, the last recipient of the Order being Sir Edward Elgar. Honorary life membership has also been conferred on Mr. Gustav Hamel, the well-known aviator, as well as on the High Commissioners for various Colonies.

#### Turkey and Warplanes.

Turkey has evidently learnt a valuable lesson from the Turco-Italian campaign. The Turkish Government have now found it advisable to have some machines, and are placing orders in France for as many machines as they can get for immediate delivery, the orders including Blériots, Dperdussins, and Nieuports. Pilots for these machines, and to act as instructors, are being engaged in various countries, and it is said that certain British aviators are joining the Turks.



### The Paris Show and How to Get There.

The Paris Air Show opens on the 17th, and reports from Paris say it is to be a much bigger affair than any previous show. All the galleries of the Grand Palais are to be opened and will be occupied by exhibits. No one who is really interested in aviation should miss seeing the show, and it will offer a good opportunity of comparing the best French work with our home products. Those who are going over should not omit to note that they can do so cheaply and in comfort after December 21st by the special South Eastern and Chatham Railway excursions. These special tickets are available for a fortnight, so one can inspect the show at leisure. The third-class fare is only 30s., and the second 37s. 6d., so the cost of travelling is very low. The trains on the Chemin de Fer du Nord, running in connection with the S.E. and C.R. boats, are most comfortable, and the sea journey is of the shortest, so one can cordially recommend this route. As these special fares commence only four days after the opening of the show one can safely wait till then, for the exhibits generally take a few days to complete, as is the custom at most shows.

### Védrines has an Accident.

Védrines, while manoeuvring on one of the new Morane-Saulnier monoplanes, fell near Villacoublay. He was conveyed to hospital, where it was found that he had dislocated his shoulder. A British aviator just back from France reports that Tabuteau is flying magnificently on one of these machines, which are a distinct advance on the original Morane-Borel machines. Apropos of Védrines, it is reported, on excellent authority, that his failure to go through the 300 kilometre speed test on the 80 h.p. Anzani-Deperdussin in the French Military Trials was due simply and solely to personal troubles between him and Anzani. And that fine sportsman, M. Deperdussin, had to suffer for it.

### The Morane-Saulnier Monoplane.

Leon Morane and his friend, Dr. Saulnier, who have severed their connection with the Borel firm, are now turning out a monoplane of their own which may best be described as exactly half-way between a Morane and a Nieuport. It has the ordinary Blériot type tail flap—in which Morane is a firm believer—a body like a Nieuport, the wings cut away in front like a Morane, and a Morane chassis, minus the skids and shock absorbers. The length of the machine is 26 ft., the spread is 28 ft., the surface 170 sq. ft., and it is fitted with a 50 h.p. engine. It looks exceedingly neat and fast, and ought to put up some quite good performances.

### Austen Chamberlain in Bristol.

Mr. Austen Chamberlain was the guest of Sir George White, Bart., at Cotham House, after speaking at the Colston Hall, on Friday night. Previous to his departure he visited the British and Colonial Aeroplane Company's Works at Filton. Mr. Chamberlain evinced much interest in the work, especially in the drawing office. He inspected the new "Bristol" monoplane, which will be the only British-built machine in the Paris Aero Show, and expressed himself in praise of the "Bristol" enterprise.

### An Austrian Aviator Killed.

While flying at Wiener Neustadt on November 29th, as a passenger, with Lieutenant Nittner, Herr Mosca, a Trieste aviator, was thrown from his seat a distance of fifteen paces owing to a bad landing, and was killed on the spot. Lieutenant Nittner was injured. Judging from the accounts in the French papers, this was simply another case of not sticking to the machine when it struck.

### The Increase of Speed.

The steady increase in the speed of aeroplanes may well be gauged from the following table. These speeds are very important in view of the forthcoming discussion on military aeroplanes:—

			per hour.
Santos Dumont	Bagatelle	12 Nov., 1906	41,292 kms. (25½ miles)
H. Farman	Issy-les-Moulineaux	26 Oct., 1907	52,700 kms. (32½ miles)
Tissandier	Pont-Long	30 May, 1909	54,810 kms. (34 miles)
Curtiss	Reims	23 Aug., 1909	69,821 kms. (43½ miles)
Blériot	Rims	24 Aug., 1909	74,318 kms. (46½ miles)
Blériot	Reims	28 Aug., 1909	76,955 kms. (48½ miles)
Leblanc	Nice	23 April, 1910	77,579 kms. (48½ miles)
Morane	Reims	10 July, 1910	105,508 kms. (66½ miles)
Leblanc	New York	29 Oct., 1910	109,756 kms. (67½ miles)
Leblanc	Paris	12 April, 1911	111,802 kms. (69½ miles)
Nieuport	Châlons	11 May, 1911	119,760 kms. (74½ miles)
Leblanc	Evreux	12 June, 1911	125 kms. (78½ miles)
Nieuport	Châlons	16 June, 1911	130,087 kms. (81½ miles)
Nieuport	Châlons	21 June, 1911	131,136 kms. (81½ miles)



Captain Fulton, of the Air Battalion, the first officer to win the Superior Certificate, snapped on his ear at Salisbury Plain, while watching his command at work.

### The First Military Superior Brevet.

Congratulations to Captain J. D. B. Fulton, R.F.A., on securing the first military superior brevet. The more credit is due to him in that he did all his flights on a Bristol biplane of the old type possessed by the Army, whereas Valentine did his on a Bristol monoplane of the most modern kind. Captain Fulton, being in command of the aeroplane company of the Air Battalion, has so much administrative work to do that he has little time for flying, which adds all the more to the credit of his performance. He made his cross-country flight on Monday, November 27th, and completed the height and gliding tests on Thursday of last week.

### Another Brevet on the Valkyrie.

Congratulations to Mr. C. S. Chambers on winning his certificate, which he did, on Tuesday last, on a Valkyrie. He used the school machine, with 35 h.p. Green, which is running splendidly, and seems to give just as much power as the 50 h.p. rotary engine on the racing machine. Mr. Chambers has spent a considerable time at the Valkyrie school, and now possesses a very thorough grasp of all branches of aviation.

### A Full Dress Debate.

AS THE AEROPLANE goes to press news comes to hand that Colonel Seely, the Under Secretary of State for War, has accepted an invitation to be present at the military discussion at the Royal United Services Institute under the auspices of the Aeronautical Society on Monday next. A number of officers of the General Staff of the War Office will take part in the discussion, and it is quite possible that some information will be given as to the tests proposed for military aeroplanes in the forthcoming competition. Tickets may be obtained from the Aeronautical Society, 53, Victoria Street, S.W., and application should be made for them immediately, as the lecture theatre at the R.U.S.I. is small, and therefore only a limited number of tickets can be issued. This will be one of the most important days in the history of aviation, so far as its influence over the future is concerned, and everyone interested should make a point of being present.

## The Tragedy at Filey.

The lamentable accident which cost the lives of poor Hubert Oxley and Robert Weiss at Filey on Wednesday morning is, it is to be feared, another example of lives thrown away without bringing us any knowledge that we did not possess before. And it is only too certain that the accident was absolutely avoidable.

So far as one is able to judge from the accounts of eye witnesses the cause of the accident was almost exactly similar to that of Wachter's accident at Reims last year, and was, in many respects, similar to Chavez's accident. The machine, after flying well for several days, was taken up to a considerable height, and then was brought down steeply with the engine running at full speed; 80 ft., or thereabouts, from the ground the pilot apparently started to flatten out the downward path of the machine, so as to reduce speed for his landing. The wings collapsed under the strain, with the result that the machine came down absolutely head on, throwing Oxley out of his seat, so that he broke his neck on the sands, and burying Weiss, who was seated some feet in front of him, under the wreckage of the machine. It would appear that Weiss' fatal injuries were chiefly caused by his being thrown forward into the engine.

It is perfectly obvious that, under such circumstances, adversely inclined critics will blame the wing construction entirely for the accident, and it may at once be granted that something in the wings or in their connections was too weak to stand the strain put upon them, but this fact does not, by any means, show that the wings were too weak for the purpose for which they were intended.

The machine was essentially an experimental machine, and was the first of its type. It was fitted with a heavy Renault engine, giving nearly double the horse-power of any previous engine fitted in a Blackburn machine. The machine itself was correspondingly heavy, and there is no reason to think that the wings and their connections were not made correspondingly strong, but the unfortunate fact remains that the pilot asked the machine to do something which it was never intended to do.

It may be necessary, under exceptional conditions, to bring a machine down steeply in order to land within a limited space, but the flattening out process before landing should always be taken with the greatest gentleness. A machine diving, with the engine running at full power, may pick up a speed of almost double its proper flying speed, and, when the tail is suddenly thrown downwards, the whole momentum of the machine's own weight, plus the extra speed given by the engine running full power with far less than its normal load, is suddenly concentrated on the wings as the machine is flattened out. In fact, the strain is practically equivalent to dropping the machine from a considerable height on to its own wings.

The obviously reasonable thing for any pilot to do, when he has a new and experimental machine to handle, is to fly it with extreme care for at least a month; gradually taking his glides a little more steeply and gradually flying it in stronger and stronger winds, and after each flight he should go over every wire and screw in the machine with the most minute care to see whether any signs of slackening or giving are showing anywhere.

Instead of this gradual process of testing, we find a pilot, after flying a new machine for about four full days, asking it to do a thing which should only be done under extreme necessity by a most experienced pilot on a very thoroughly tested machine. It, therefore, seems most unfair to put the blame on the machine when, as a matter of fact, inhuman as it may seem to say so, the major portion of the blame rests on the unfortunate victim himself.

As I have pointed out, time after time, ninety per cent. of the fatal accidents which have occurred in aviation have been absolutely avoidable, and of these fatal accidents a very large percentage have been due to the foolishness of the pilot more than to the fault of the designer. The unfortunate Oxley's own mechanic had said that he was particularly fond of diving and flattening out suddenly. It has also been said to the writer that neither Oxley nor his partner were a safety belt, and there is always just the possibility that had Oxley, at any rate, worn such a belt, he might have been saved, for the part of the machine including his seat was not damaged.

Accidents more or less of this type must happen from time to time, and the accident itself is almost exactly analogous to the accident which caused the death of Cissac when practising for a big motor race near Dieppe last year. Cissac was driving a car which had done well on the road for a consider-

able time. It had already attained great speeds, and there was every reason to believe it to be a reliable car; yet on the fatal day Cissac had got it running better than ever, he took it at full speed down a hill, travelling faster than it had ever travelled before, and on striking the bottom of the hill the front axle broke, throwing Cissac out and killing him. It may thus be seen how even in such a well-developed industry as motor-car building such accidents cannot altogether be avoided.

Hubert Oxley was born at Heckmondwyke on September 6th, 1886. His certificate was No. 78, and he took it at Brooklands on May 9th this year on the Hanriot monoplane. He never had the opportunity of taking part in any of the big competitions, and went straight from Brooklands to the Blackburn School at Filey, where he has been doing good steady work ever since. He was an exceedingly likeable young man, and his death will be greatly mourned by a large number of friends. One can only hope that his fate will be a warning to other aviators to feel sanely, and not to take unnecessary risks with machines of a new type, even when that type is merely a slight alteration of the type to which they are already thoroughly well used.

Weiss was either a German or a Swiss, and was a manufacturer at Dewsbury. He had been a pupil at the Filey School for some considerable time, and his name is, doubtless, familiar to readers of THE AEROPLANE. He had made several flights before on this machine, and on this particular occasion it was Oxley's intention to take him as a passenger for a cross-country flight to Leeds in order to win the £50 prize offered for the first Yorkshire aviator to fly to Leeds from the coast.—C. G. G.

Writing of poor Oxley, a correspondent, who is in the habit of going to Filey, writes:

"The facts are that in this case he did a sudden dive from over the town of Filey from a height of 600 ft., and, considering the position from which he started to descend and the position on the sands where he finally fell, the angle of descent could not have been any other than very acute, as the machine was wrecked only about 100 ft. from the cliff side, and at this point the cliffs and houses at the top are about 350 ft. high. I think there can be no doubt that this was intentionally done, as two or three of the observers saw him distinctly flatten the machine out and plunge, as it were, forward, at the same time the whole plane giving a violent tremble, and bursting. One of the on-lookers saw bits of wood fly from the planes, which seems to prove that they were burst. In any case, there is no doubt that until within about 50 ft. of the ground the machine was quite all right. You can imagine what a terrible gloom this has placed on Filey, where Oxley had gained great popularity. He was without doubt a brilliant flyer, and had no sense of fear, but, unfortunately, he cannot have grasped what danger he was running into when attempting those dives."

[The actual strain on the wings, supposing Oxley to have descended at an angle of 3 in 1 and to have pulled back his cloche to such a point that the machine would have "flattened out" in one second, would be about 11,500 lbs., or almost nine times the normal load.—P. K. T.]

### The Proper Spirit.

A story has gone the rounds of several French and English papers, which deserves repetition. Lieutenant Ludmann, on a Bréguet, started one Sunday not long ago for Reims, with a sapper as observer. Passing over Cambrai at 1,800 ft., the sapper Deville, who, being in a Bréguet, was seated in front close to the motor, noticed that one of the engine bolts was loose, and that the magneto was not working normally. He made signs to the officer, who cut the ignition, so as to be able to hear better what his subordinate wanted to say. Hoping, however, that the machine would get as far as Reims, Ludmann switched on the engine again, but the sapper noticed that the bolt was getting looser and looser, till danger became imminent. He warned his superior, who then resolved to come down at once, which he did safely at Catelet. During the moments that followed the soldier found time to write in his notebook:—

"If we fall, it should be known that accident occurred through a bolt in the motor coming loose and the faulty working of the magneto, and that there was no error either in the construction of the aeroplane, or in the handling of it."

The only thoughts of the simple-minded soldier were to exonerate his superior from any blame for the catastrophe which he expected, and to give an explanation of the cause.



## More Answers from Pilots.

Below will be found the answers to the last set of "Questions for Pilots." The winner is again Mr. J. D. North, of Belfast, to whom £1 is has been sent. His paper again stands alone in its excellence, though some of the others are very good, and the marks for the best ten papers are published, so as to allow these competitors to judge for themselves where their defects lay. It is to be feared that Mr. North must be barred from future competitions, unless he will consent to be penalised to some extent.

Q. 1.—You have lancia on a ground you don't know, and are heading straight for a ditch at some speed. What means have you for checking the speed of the machine:—

(a) In an aeroplane of the Farman type?

(b) In an aeroplane of the Blériot type?

The methods of stopping aeroplanes when on the ground are as follows:—

- (1) By some special mechanism—e.g., brake on wheels or raising wheels above skids.
  - (2) Increasing head resistance by exposing extra surfaces as nearly as possible normal to the direction of flight.
  - (3) Creating friction between some part of the machine and the ground without the use of a special mechanism.
  - (4) Jumping out and holding on.
- It is assumed that the engine has been switched off.
- (a) Applying foregoing to a Farman type machine.

(1) No mechanism is provided.

(2) Considerable resistance can be afforded by working the flap lever violently from side to side, and at the same time similarly working the rudder to neutralise any slewing effect. The flap area on a Farman, particularly of the military type, is considerable, and the rapid working of the levers makes them almost as effective as if pulled down all simultaneously.

(3) By raising the front elevator further resistance is added, and the back skid is brought into contact with the ground. As the Farman carries a considerable load on the tail this is pretty effective. If the elevator were thrown over rapidly just after switching off the machine would probably jump into the air, slow up and sit on its tail with disastrous results to that member, but with the speed effectively checked.

(4) A Farman is too heavy to be held back by one man besides this, owing to his position, it is practically impossible for the pilot to get out safely while the machine is moving.

(b) (1) No mechanism is provided.

(2) There are no surfaces of sufficient effective area to slow up by this method.

(3) The small weight on the Blériot tail makes stopping by this method difficult. Merely depressing the tail by means of the elevator is hardly sufficient, and the pilot climbs back along the fuselage, thus throwing considerable weight on it and slowing up the machine. In the old "tail-wheel" Blériots this method would, of course, be useless, but all the modern machines have tail skids.

(4) Owing to his convenient situation it is quite possible for a pilot to jump out and hang on to the machine, but still the performance is rather acrobatic and should be avoided if possible.

[Nine marks.]

Q. 2.—Under what circumstances would you suggest the trying of a propeller of less pitch on any machine you may be flying?

If the propeller is not giving sufficient thrust it may be that the slip is too great and the disc area too small. To correct this the diameter must be increased and the pitch decreased.

If the engine is giving less than its full revolutions the load is too great for it. The load may be reduced by reducing either the diameter or the pitch or the blade area. In all probability the change required would be a combination of the above, but depends on the particular requirements of the machine. Merely decreasing the pitch might mean that the thrust would fall off too rapidly as the speed of advance increased.

Under very special circumstances (such as those under which the Mawson South Pole R.E.P. is situated) where the density of the air is very high owing to rise of pressure or fall of temperature or possibly by excessive humidity the speed of the machine may be lower than usual and consequently a smaller pitch propeller might give greater efficiency.

[Nine Marks.]

Q. 3.—Why does an under-powered aeroplane fly tail low?

A correctly designed flying machine is so arranged that when the planes are at their designed angle of incidence (i.e., when the machine is flying at its designed speed) the tail outriggers or fuselage are horizontal or nearly so. If, however, the machine is underpowered it cannot get up its proper flying speed, and consequently has to have a bigger angle to fly at all. To allow this the tail must drop.

In an exactly similar manner a machine flying in excess of its designed speed flies tail high, giving a decreased angle to compensate for the increased speed.

If pilot did not drop the tail in the first case the machine would never get off the ground. In the second, if he did not raise it the machine would merely climb instead of speeding up.

[Ten marks.]

Q. 4.—You are in the position of having to make a forced landing in a field full of bushes apparently about three feet high. How would you land under these circumstances?

Since the bushes are about 3 ft. high they will probably hit the machine "below the belt" and tend to make it stand on its head if the landing is made in the ordinary way; also if the bushes are of a straggly nature they will catch the wheels of the machine, just as the corn caught Mr. Alan Boyle's at Bourne-mouth with disastrous results. Obviously, then, it is to the pilot's advantage to land with as little forward motion as possible, and the best method is to glide down fairly near to the ground, flatten out and finish in "vol pancake," which should land the machine pretty safely. Machines like the Valkyrie or the Sanders would probably negotiate the field without special manoeuvring, more especially the latter, in which provision is made for raising the wheels prior to landing. If there should be any wind at the time the pilot should come round to face it, to take advantage of its slowing up effect, and also to prevent side drifting, which would tend to turn the machine over sideways.

[Ten marks.]

Q. 5.—Do you consider that an aeroplane should have a front elevator? Give your reasons.

The advantages of a front elevator are as follows:—

(1) The head of the machine can be raised while the tail is on the ground.

(2) When used in conjunction with a tail flap better control is afforded by means of the two points of application thereby provided.

(3) It provides a "ship's head" for the pilot to steer by.

(4) In an engine behind machine it takes the bump before the pilot in the event of a smash.

The chief disadvantages are that it tends either to instability or inefficiency.

If the angle is large enough to allow the elevator to be worked through a reasonable angle without producing a condition of instability, it is large enough to be inefficient. The only remedy seems to use an elevator of colossal size, as is done in the Cody machine, or else use a fixed leading plane and a very small elevator as Valkyrie. In both cases heavy outriggers must be used, and unless the machine is to be unworkable the tail must be done away with very much reduced. Another important fact is that the C.P. is brought forward in front of the main planes, and consequently the "I" must be increased.

The general conclusion come to is that if the machine is of the engine behind type the advantages of the front elevator are considerable, especially as a buffer to protect the pilot. On the other hand, the engine in front type has little or no use for a front elevator, which would be a positive disadvantage.

It is particularly noticeable that the chief advantage of the front elevator is in correcting troubles due to the pilot being stuck out in front of everything, and if the machine is of the engine in front type this difficulty vanishes, the front elevator with it.

[Eight marks.]

Q. 6.—Is there any relation between the speed of a machine and the maximum wind velocity it is safe to fly in? Give reasons.

Case 1. In a wind of uniform velocity:—

So long as the aeroplane travels in the same line wind speed has no effect on it. When the machine changes its direction it must change its velocity, which is the resultant of normal speed and wind direction.

Obviously any change of velocity means change of momentum, and change of momentum means work done. If the velocity must be increased the machine will tend to drop momentarily. Similarly, if it must be decreased the machine will momentarily tend to rise.

If the C.G. is not co-incidental with the C.R. in all three planes (in the true meaning of the word) the machine will upset.

Obviously, the smaller the ratio of the wind speed to the machine speed the less the above effects will be produced, and consequently the higher the machine's speed the higher wind it may be flown in.

#### Case 2. In gusty winds.—

In addition to the effects already noticed the higher the speed of the machine the less it will be affected by wind gusts, the reasons being closely analogous to those given in Case 1.

In addition, the higher the machine speed the less the wind deflects it from its course and the less liable it is to be blown into danger.

Although not strictly included in the question it might be mentioned that the machine speed has a definite relation to the wind speed it is worth while to fly in, as even if it were as safe as a house a 35 m.p.h. machine in a 30 m.p.h. wind would not be much better than a balloon. [Ten marks.]

#### Q. 7.—What are the disadvantages of rotary motors as applied to aeroplanes?

The disadvantages of a rotary motor are as follows:—

(1) They are inefficient and consume vast quantities of petrol and lubricating oil.

(2) They are awkward to fix, and wherever they are fixed, if any part gave way whilst running the effects might be very serious.

(3) They offer considerable resistance owing to the fact that the resistance area is practically equal to disc area, and in addition they "cut out" the centre of the propeller.

(4) They are very liable to lubrication troubles and attendant worries of overheating, sooted sparking plugs, etc.

(5) They have a considerable gyroscopic effect which causes dangerous dives and swerves as explained in the answer to 9. [Five marks.]

#### Q. 8.—Why is a good gliding angle advisable in an aeroplane?

A good gliding is advisable on an aeroplane primarily as a means of securing efficiency. The thrust H.P. required to sustain a plane in the air being  $\frac{mv \cdot \tan \gamma}{550}$  it is obvious that the smaller the gliding angle the less H.P. required for a given weight and velocity.

In addition, a good gliding angle means a greater range to choose from in the event of forced descent owing to engine stoppage. The actual range being  $h \tan \gamma$   $h$ =height).

Incidentally, though really included in the first explanation, the best angle of incidence of a plane is its gliding angle, and consequently the smaller the gliding angle the smaller the angle of incidence. [Ten marks.]

#### Q. 9.—What effect has the gyroscopic action of a rotary motor on a biplane of the Farman type?

The gyroscope possesses an axis which resists pitching and swerving, the resultant being at right angles to the force—i.e., an attempt to swerve results in a pitching movement and vice versa.

A Gnome motor looked at from the propeller boss end rotates in a counter-clockwise sense. The results on a Farman biplane are as follows:—

- (1) Swerving to right results in throwing tail down.
- (2) Swerving to left results in throwing tail up.
- (3) Diving results in swerving to left.
- (4) Tilting up results in swerving to right. [Ten marks.]

#### Q. 10.—In your opinion, has the span of an aeroplane any influence on the lateral stability? If so, what?

One of the most obvious effects of a large span is a large "I" (moment of inertia) about an axis through the c.p. and parallel to the line of flight. The effect of this is to increase the amount of disturbance created by any given disturbing force. On the other hand, a large span offers greater resistance to rolling than a short span machine; owing to either its greater area or the greater distance, the wing tip must move to produce a roll. If a dihedral angle is used a large span makes it more effective. In a short span machine the c.p. is more easily shifted by wind gusts owing to the fact that the supporting surface is more localised. It is particularly noticeable that some of the most stable machines of to-day—the Cody, the Antoinette and the Bréguet—all have large spans. The question of wave length and its relation to aeroplane dimensions has often been brought up, but as on this, as in most other matters, the noble company of mathematicians and meteorological experts are in a house divided against itself, it would be perhaps as well to leave it alone. [Ten marks.]

#### Q. 11.—What are the objections to putting a propeller (i.e., a tractor-screw) at the front of an aeroplane? And what are the advantages of this arrangement?

The disadvantages of a tractor-screw are as follows:—

- (1) No advantage is taken of the wake.
- (2) The machine behind cuts out part of the effective disc area.

(3) This fragile, expensive and very essential piece of mechanism is generally in tractor-screw machines stuck out in front of everything and easily gets broken.

- (4) The draught from it inconveniences the pilot.

(5) In starting up, if the machine is not properly held the unfortunate tractor twister will probably be beheaded.

The last four of the disadvantages might be remedied by enclosing the pilot, etc., in a stream line body like on the Piggot monoplane, by carrying the skids well forward of the screw and by providing a starting handle or self-starter.

#### The advantages:—

- (1) The main planes work in the slip stream and consequently lift more and are less affected by wind gusts.

- (2) Propeller cannot hit the pilot in the back if it bursts.

- (3) On an engine-in-front biplane it is the simplest place to put it.

- (4) If it bursts it will not cut any wires or break any outrigger booms.

As a matter of fact, the chief consideration that constructors take into consideration is expediency, as it would obviously be awkward to fit a propeller behind a Blériot monoplane, as it would require a long, heavy shaft and heavy engine fly-wheel and various other fittings, which would make it more trouble than it was worth. [Ten marks.]

#### Q. 12.—Why does the wash of one aeroplane have a disturbing effect on another?

An aeroplane obtains its lift by deflecting a stratum of air; this stratum having a thickness approximately equivalent to the chord of the plane, is thrown down a considerable distance, forming a wash. Obviously, if a machine, or any part of it, came into the region of this wash it would lose in lift and tend to fall in the first case and capsize in the second. It is frequently said that this evil is caused by the propeller wash, but that from the main planes is more likely to have effect since it is spread over a much larger area and has a considerable downward trend. [Ten marks.]

J. D. NORTH.

4, Wolsley Street,  
Botanic Avenue, Belfast.

#### The Marks of the Ten Best Competitors.

Below will be found the names of the ten leading competitors, together with the marks scored by each in each question, reckoning ten marks as the maximum for each question:—

NAME	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
J. D. North...	9	9	10	10	8	10	5	10	10	10	10	11	
Forsan ...	6	4	8	10	9	10	5	10	8	10	8	9	
"Busnest" ...	10	7	7	9	5	6	4	10	10	2	8	8	86
Powell ...	10	0	8	8	6	4	9	10	3	6	8	8	80
Dinsor ...	5	5	8	6	10	6	8	7	10	0	3	10	78
C. R. Taylor	7	2	8	10	5	6	5	3	7	9	4	0	66
S. Widdas...	7	0	5	8	3	5	7	5	7	10	5	2	64
Ramsbottom	4	0	1	8	5	2	5	8	9	5	4	8	59
Shepley-Past	10	2	6	7	6	4	4	2	1	1	3	7	53
Stammers ...	7	0	1	10	5	1	3	3	3	5	4	8	50
Average	7.5	2.9	6.2	8.6	6.2	5.4	6.0	6.3	7.0	5.6	5.9	6.9	74.5

#### An Aviation Year-Book.

Atmos, a yearly directory, the first number of which has recently been produced in France, is an exceedingly useful volume.

It is written in French and English, in parallel columns, and contains a comprehensive directory of makers of aeroplanes, engines, and various classified accessories. The English translations are sometimes peculiar, but are always quite understandable. The matter is carefully arranged, and, especially as regards the French industry, very exhaustive. There is also an excellent list of clubs, records, etc. The dimensions, and, in several cases, sketches of the leading machines of 1911 are also given.

The price of the book is 12 francs, and it can be obtained, post free, on application to the offices of THE AEROPLANE, 166, Piccadilly.



## Correspondence.

The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.

### More About Instruments.

Sir,—I am glad to hear that Mr. Clift has found it possible to estimate side drifting without the aid of special instruments. I should imagine, however, that the estimate was very approximate. The instruments I referred to in my letter are intended to give the land speed of the aeroplane in its two components, forwards and sideways. They certainly require the earth to be in sight, and under ordinary circumstances there should be no difficulty on that score, but they enable the pilot to obtain these two velocities in a few minutes and with the greatest of ease. The use of the data thus obtained as a means of accurately correcting the course of the aeroplane is only one of the many to which they may be put.

A much more difficult problem to tackle is that presented when the aeroplane is out of sight of land. If the sun is shining side drifting may be indicated by a shadow plate. Unfortunately, this latter instrument requires a compensating mechanism, a perfect suspension, and if the instrument is to be of any practical use the observations will have to be carried out through a microscope. First and foremost, the apparatus is bulky, heavy and expensive, it is very susceptible to vibration, and, except under ideal conditions, would probably be inaccurate. In fact, if the sun is shining the pilot might just as well descend till the earth is in sight.

Then we come to the navigator's horror—fog. At first it seems that there is no means of measuring the velocity and direction of side drifting. Let the pilot steer in a circle, having a certain radius. The machine must be tested in a calm to find what deflection of the rudder and what banking produces a circle of this radius. Now, if there is any wind the actual course will not be a true circle. The speed of the machine will be changing from  $V+v$  to  $V-v$ , where  $V$  is the aeroplane speed and  $v$  the wind speed, similarly the momentum will change from  $MV+Mv$  to  $MV-Mv$ , where  $M$  is the mass of the machine. Now, if a delicately balanced pendulum were hung in the machine the change of momentum would cause it to momentarily assume certain attitudes dependent on the forces acting on it—in other words, it would sway. Now, if the machine is at its normal speed apart from any speed imparted to it by the wind, if the radius of the "circle" is constant, there must be some relation between the velocity of the wind, and either the distance, the time, or the rate of deflection of the pendulum. Obviously there must also be some relation between the course of the machine at the moment when the pendulum is in the attitude of maximum deflection and the direction of the wind. What this relation is I would not dare to attempt to say; in fact, I have, in all probability, said something which will cause a mathematician to rend me (metaphorically) limb from limb. It is quite possible, too, that it is more a matter of theoretical interest than practical utility. I should, nevertheless, be glad if someone more gifted than I would dissect the above suggestions and give the formulae for the aforesaid relations (if any).

In conclusion, may I correct a little error of deduction which led to my being described as a mechanic at Hendon, when you were good enough to publish my paper of "Answers to Pilots"? As a matter of fact, the Baby Grahame-White type biplane referred to was the aeroplane built by the Aeroplane Building and Flying Society, by myself and my associates. This machine, which was commenced before the Baby White machine was shown in England, was almost identical in dimensions with the Baby, the chief difference being that it was fitted with an infra-lifting tail and twin propellers.

Belfast.

J. D. NORTH.

### Aviation as a Profession.

Sir,—Mr. Jeremiah Jenkins, under the above heading in the December 7th issue of THE AEROPLANE, should, undoubtedly, be acquainted with more facts of the Aeroplane industry than he apparently is, before imparting advice to those who are contem-

plating adopting aviation as a profession or aeroplane constructing as a trade.

His statement that "Any capable, energetic, and practical mechanic, with experience, can easily obtain a good position in any aviation firm" is, unfortunately, incorrect.

That "there is a great demand for men who have the trade at their fingers' ends and are not merely automatic machines" is, indubitably, an absolute untruth.

Chiefly through the long-delayed support from the Government to the British aeroplane constructors the industry is, as Mr. J. J. probably knows, in a very unsatisfactory state; and as a consequence mechanics are not wanted, but on the contrary, mechanics "want."

I am personally acquainted with a number of practical aeroplane mechanics who, through being unable to obtain employment in any aeroplane works, have reluctantly returned to their former occupations.

So enthusiastic are quite a large number of young men to learn the aeroplane trade, that constructors could "flood" their works with premium pupils alone if they so desired.

The chances of those desirous of entering the aeroplane works, and more especially those who have no mechanical training—and are without means or influence—are indeed remote under present conditions.

The postal correspondence school Mr. J. J. mentions may be very useful in its way, but who would employ a man with no credentials other than a diploma granted by the heads of a correspondence school?

A better procedure would be to become a member of an aero club, for those who reside in a neighbourhood where one exists, where they could help to build the club's gliders, and in some cases power-driven machines.

They would thereby acquire a more practical training, and have a much better opportunity of getting a start in a commercial aeroplane works.

Those who desire to become aviators without possessing the necessary amount of money for tuition can only hope to do so through a club possessing an aeroplane, or by being a mechanic to an aviator. The chances in each case are about equal, but exceedingly remote.

The aeroplane industry has, undoubtedly, a good future, and when better conditions prevail aspirants will have a more favourable opportunity of realising their ambition.

Brixton, S.W.

F. W. C.

Sir,—*Re Jeremiah Jenkins*'s (whoever he might be) letter in your last week's issue, I should like to inform that gentleman that it is he who is under a delusion, and that his idea is a "myth" when he states that any capable, energetic and practical mechanic can obtain a good position "easily" with any aeronautical firm. I only wish his dreams were true—it would point to a more flourishing state of aviation in the British Isles. I can assure Mr. Jenkins that half a dozen aeronautical firms, to my knowledge, have been compelled, much against their wish, to discharge really first-class mechanics after keeping them on less than half-time for several weeks and, in some cases, months, in the hopes of the trade improving. Also it might interest Mr. Jenkins to know that during the last few months several good firms have had to close their works, merely keeping a small office open in the hopes of a stray order, or perhaps that the British Government will awake and support home industries.

Battersea.

AN AEROPLANE MECHANIC.

### A Matter of Opinion.

Sir,—In THE AEROPLANE of November 16th you will find these words: "Mr. Le Maître . . . happily ignores the fact that in the modern aeroplane the pilot practically leaves the machine alone to stabilise itself when once he is fairly off the ground."

In answer to my gentle remonstrance, you further fulminate thus (ibid. November 23rd): "Perhaps he (me, dear sir) has never seen Mr. Barber doing circuits and figures of eight on a Valkyrie in a ten-mile wind, while conducting an imaginary orchestra with both hands."

And on another occasion (ibid. December 7th) occurs this: "Colonel Seely pointed out that if aeroplanes were to become vehicles of ordinary use they (the constructors) should turn their attention towards producing machines which were much safer than anything at present known. Too many aviators were killed with the present machines."

It would thus seem that the gallant Colonel ventures to doubt that absolute stability and perfect safety in the present

aeroplane insisted on in your comments. He would, apparently, dare to question the ability of a pilot, even in a Valkyrie, to conduct a Wagnerian overture without at least one or two false notes. May I timidly venture to suggest in the most unobtrusive manner in the world that he is not absolutely alone in this belief; that there are others, no doubt ignorant, prejudiced, and unenlightened, who even at this present day regard the aeroplane as being slightly less stable than a tramcar, and that one of the most insignificant of these doubting Thomases is,—Yours very humbly,

W. LE MAITRE.

[Mr. Le Maitre is, undoubtedly, correct in his assumption that "there are others." One of the missions in life of THE AEROPLANE is to reduce the numbers of these "others" by pointing out the defects of machines which do not possess natural stability and drawing attention to those machines which possess it. Unfortunately, the majority of people do not take sufficient interest in aviation to read aviation papers of any kind, and, consequently, they only hear of fatal accidents, which generally happen through the ignorance of the pilot or of the constructor, and so do not realise the immense difference between the modern aeroplane and the box-kites and badly-designed monoplanes of a year or so ago.—Ed.]

### Our Descriptive Writers.

SIR,—I enclose a cutting from the *Leicester Daily Post* of Saturday last. It describes the slight accident to Moorhouse upon his arrival at Market Harborough. I did not know Radley, who, I believe, flew the machine from France, was such a fine swimmer! I wonder the papers did not make more of his fine half-cross-Channel swim! Or, as it was barely half way, perhaps he swam back to France! Or perhaps his *vol plané* took him nearly to shore.

I must say how much I look forward to Thursday afternoon for THE AEROPLANE. It is most interesting and "newsy."

Loughborough.

P. B. C.

"Harborians will look on December 5th, 1911, as being a red-letter day in their local history. Thousands of the people of the town yesterday saw an aeroplane within 'touching distance,' and that is what very few can say who have visited the larger air meetings. The arrangements had been so made that everyone paying the 'nimble sixpence' could examine closely an up-to-date specimen of the heavier-than-air craft."

"The machine originally was a Blériot monoplane, and as a Blériot it started to cross the Channel. But barely had its pilot brought it half-way, when the engine 'refused'—the poor pilot having to swim ashore, and the aeroplane remained for three days and nights in a liquid grave. But it was resurrected, and brought to England. Its adventures since—to change the imagery—the ceremony of its christening have been fairly exciting in a mild sort of way, until to-day it is being conveyed back to its home at Hendon—smashed and almost unrecognisable as such, but still an aeroplane."

"In the Harborough Cricket Field the monoplane lay—a wreck. It is a sight to make a man possessing the usual amount of pride in his handiwork weep. But does Moorhouse weep? No, not he; he laughs. That's all. 'It will take a month to put her right, but it's not important,' this is the attitude of the airman. The engine and main chassis of the aeroplane are intact, and will take very little 'squaring up.' The damage consists chiefly of the breakage of the landing struts and wheels. One of these latter lays disconsolately on its side, as if at rest from all its troubles, while the other has a distinctly tired look—a list to starboard. It is almost comic. Perhaps this is why Moorhouse laughs."

"It is no longer a Blériot. From change to change it has been gradually modernised until, like the old lady's umbrella, little of the original structure remains. More, it bears across its rudder the sign-manual of Will Moorhouse."

"The aviator showed himself to be as cool as the proverbial cucumber. One instant of hesitation, and in all probability he would have been buried underneath the weight of the seven-cylinder Gnome engine. The writer had such a position that he could see perfectly every muscle of the airman's face as his machine, after skimming the top of the cricket pavilion, did that terrible dive to what looked like death. Down, down it came, like some bolt from the blue! Moorhouse sat there calm and unmoved till, as it struck the earth with a shattering smash that none of us who heard it will ever forget, he was flung forward out of his seat."

"Up came the 'tail,' up and up, until, as it appeared to hesitate perpendicularly in the air, our hearts stopped in their beating. We were paralysed. No one moved. No one even groaned. But Moorhouse, he lifted himself from his prone

position, and with upward and backward throw of his body, sufficiently altered the centre of gravity to cause the machine to resume its normal position. And he—he sat calmly still while a photograph was taken! But we cheered; cheered as men who have come unscathed through a great fright."

"Afterwards, Mr. Moorhouse told me that all he thought of at the time was the 'bump.' I don't believe he ever hardly knew the manner in which he saved himself. Everything was done so easily that it appeared as if he must have practised that turn all his aviating life."

"More than a word of thanks is due to Mr. Edgar Mobbs, who arranged the whole thing. One can hardly imagine the Northampton three-quarter in the pose of a public benefactor. And he doesn't pose as that, either. But for all that he is, and all Harborough people will agree. W. P. C."

[The italics are THE AEROPLANE's, but what a wonderful man is Mr. Mobbs.—Ed.]

N.B.

Mr. A. Cardnell, of Bedford Park, is informed that unless he sends his full address nothing can be done in the matter.

### A Scottish Business Proposition.

Elsewhere will be found the prospectus of the Scottish Aviation Company, a venture which certainly deserves consideration. Naturally, in the present state of aviation, all propositions connected with aviation must be of the kind known as speculative. That is to say, no firm as yet is in a position to show years of profits which ensure the cautious investor a certain return. At the same time, there is no doubt that the aeroplane must before long become a paying proposition, and with the spread of military and civilian aviation, well conducted schools must become genuine commercial undertakings.

The writer has no personal knowledge of the actual stock of aeroplanes and accessories belonging to the vendors of this company, but it will be noticed that practically two-thirds of the purchase price is in shares, and that nothing is being paid for goodwill. It is certain also that the £600 of the purchase-money payable in cash cannot possibly recoup the vendors for their original outlay. With any luck, the estimated revenue is quite moderate and so are the expenses. Altogether the venture seems a plain, straightforward affair, in the hands of men with very considerable experience of aviation, for Mr. W. G. Duncan was responsible for some of the most successful organisation at the Lanark meeting last year, and, although no aeroplane company could be recommended to "the widow and the orphan who pray for ten per cent.," the Scottish Aviation Company is undoubtedly one of the several comparatively small firms who should, with careful management, prove quite reasonably successful.



Mr. D. Lawrence Santoni at the wheel of his Deperdussin Racer.



It should be noted that the company has the advice and experience of Mr. A. V. Roe, and has the right to build Avro machines to his design in Scotland.

#### Adequate Construction.

Now that there is something like an interest being taken in aviation, thanks to Government encouragement, it is quite probable that there will be a number of people wishing to bring out aeroplanes of their own design. The chief trouble of the purely theoretical man is that though his theories may be all right his construction is so often all wrong, and it is generally far better for himself if he places his designs in the hands of a capable constructor to be carried out. The new shops recently fitted up at Hendon by the Grahame-White Aviation Company, Ltd., are equipped with the best modern tools, and are in charge of a first-class works manager, with first-class workmen under him, and consequently they are able to carry out designs and to effect repairs with great expedition and economy. One can cordially recommend anyone who is thinking of building an aeroplane to obtain definite quotations from this firm before starting in to equip a workshop and attempting to do his own work.

#### A Lecture with Demonstrations.

Those interested in models as a practical demonstration of flying should make a point of attending the lecture to be given by Mr. R. P. Grimmer on "Aviation and the Aero-Model" at the Lecture Hall, Highgate School, to-morrow (Friday), the 15th, at 4 p.m. Nearly 100 lantern slides will be shown, and Mr. R. F. Mann will give demonstrations with  $\frac{1}{2}$ -oz. flying models. Members of the general public are specially invited to attend.

#### Another Long Model Flight.

It is interesting to note that on Saturday, the 25th ult., while Mr. R. F. Mann was testing a batch of Mann monoplane, he flew one a distance of 1,400 yards, or over three-quarters of a mile, this being something like a new world's record. The flight was made over Mitcham Common, the model flying at an altitude of about 100 feet. Although a score of people were hunting for the machine, it took an hour to find it, as it had gone clear out of sight. The distance was paced by several disinterested spectators, and 1,400 yards was the average of their estimates.

#### CLUB NOTES.

*N.B.—Club Notes must be posted to 166, Piccadilly, to arrive not later than first post Monday morning.*

**Bath and Somerset Aero Club.**—Lecture by Dr. E. White at Church Institute, Bath, on Friday last on "Aeroplanes and Gliders." Makers' Catalogues gladly received by Hon. Sec., S. H. BAKER, 11, Elm Place, Bath.

**Bristol Model Flying.**—Meeting held on December 6th. Chairman pointed out that unofficial flying meetings held on Downs had been very encouraging, and it was now proposed to form society to promote experimental side of aviation. Mr. Alan James suggested that it might be possible to amalgamate with the Bristol and West of England Aero Club as Model Section. Decided that, before taking any definite steps it would be well to ascertain terms of affiliation with Kite and Model Aeroplane Association. Proposed subscription not to exceed 15s. 6d. per annum (payable quarterly), and if sufficient members join the figure will be reduced. Next meeting at 16, Berkeley Square, at 7.30 p.m., December 20th. Model flying on Downs 3.15 p.m., on Saturday, 16th.—R. V. T.

**Birmingham Aero Club.**—Annual General Meeting, Wednesday, January 3rd, 1912 8 p.m., at 9, Belgrave Road. Report of Club's doings during past year and balance sheet will be read. At last meeting it was decided to raise subscription for all members joining after December 31st to 1 guinea yearly, or 5s. 3d. quarterly but for members joining before that date to 3s. quarterly. Junior members' subscriptions will be 5s. yearly.—G. HADSON WOOD, Hon. Sec.

**Blackheath Aero Club.**—Meeting at Kidbrooke Ground, December 2nd. Distance event won by E. R. Brown, Palmer's Green Aero Club, with 437 yards, and duration flight by Slater. Committee wish to thank those who came from Palmer's Green, Croydon, South Norwood, &c. Several members now conducting experiments with tractor-screw models with main-plane leading and floating tail-planes, also main-plane leading propeller models are becoming popular. On December 9th several members practising at Kidbrooke. Clark and others gave a demonstration at the Grove Park Ground. Next Saturday, further exhibition flights at Kidbrooke, Lee, and Grove Park; and also on Blackheath at usual time.—A. B. CLARK, Sec.

**Brighton and District Model Aero Club.**—The Secretary, Mr. Chas. Barnett, resigned prior to leaving for Paris. Mr. A. Von Wichmann elected to post. Saturday last, at Brighton-Shoreham Aerodrome, 103 flights by 1-in and 2-in models. Mr. Barnett's model flying quite well without wings. Gate got height of over 150 ft. Nine models in air together. Flying next Saturday, 16th, at Shoreham.

**Stony Stratford and District Kite and Model Aeroplane Club.**—Second meeting of the fortnightly series held on December 7th. Mr. C. L. Matson gave address on "Flying Models." The lecturer, with paper gliders of various types, illustrated principles and means of obtaining stability used in current practice.—O. HAMILTON, JUNR., Hon. Sec.

**Worcester Model Aero Club.**—Meeting Saturday last, several machines out for practice. Nearly all machines, however, seemed underpowered, gliding to earth before the motors spent. During the next few meetings, propellers will be experimented with. Next meeting on Saturday, 16th, at Victoria Institute, for discussion on various items of construction, &c. First competition on Fitchcroft, Saturday, January 6th, 1912, at 5.0 p.m.—STANLEY A. SEARS, Hon. Sec.

**The Aero - Models Association (North Metropolitan Branch).**—Social Meeting at 15, Highgate Avenue, Highgate, N., on December 23rd, at 7.30 p.m. Members and prospectives should be present. Hon. Secs. will be glad of anything interesting in connection with aeromodelling.—Hon. Secs., MALCOLM B. ROSS, 15, Highgate Avenue, N.; H. BROSSIE, 9, Clifton Road, Crouch End, N.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERON, London.

Telephone: Mayfair 5407

#### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM				ABROAD			
	s.	d.		s.	d.		
3 months, post free	1	8	3 months, post free	2	9		
6 " " " "	3	3	6 " " " "	5	6		
12 " " " "	6	6	12 " " " "	11	0		

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newspapers, each issue can be obtained direct by forwarding remittance as above.

# BLACKBURN

## MONOPLANES & PROPELLERS

For Durability, Stability, and Efficiency

TUITION.

Write for prices and particulars to—

**The BLACKBURN AEROPLANE Co.,**

Phone: 3822 Central. Balm Road, Leeds. Tel gram: "Propellers, Leeds"

### When You Fly

Let your repair outfit include the means of repairing yourself. Carry a

**TABLOID<sup>TM</sup> BRAND FIRST-AID**

As carried by all the leading aviators

A serviceable pocket outfit, 2/0. All Chemists

BURROUGHS WELLCOME & CO., LONDON



Illustration

THE

## FLANDERS MONOPLANE

60-80 H.P. Green Engine (Circuit of Britain Type). One, two, or three seaters.

Pupils taught on monoplane with double control. £10 returned in event of no damage.

L. HOWARD-FLANDERS & CO., Brooklands, Weybridge.

## TUITION

£75

INCLUSIVE

**MISCELLANEOUS ADVERTISEMENTS**

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of **THE AEROPLANE**.

Special PREPAID Rate—18 words **1/6**; Situations Wanted ONLY—18 words **1/-**. 1d. per word alter.

**PATENTS.**

TO INVENTORS AND OTHERS INTERESTED IN PATENTS. **THE AEROPLANE** will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to **THE AEROPLANE, 166, Piccadilly, W.**, and should be marked in the left hand corner of the envelope "Patent."

**PATENTS.** Instructive leaflet free, from Stanley, Popplewell and Co., Chartered Patent Agents, 38, Chancery Lane, London, W.C.

**MACHINES.**

**£600** COMPLETE. For the easiest machine to handle, the most stable, the most compact, you must see the Avro Biplane. For passenger and cross country. **A. V. ROE AND CO., Brownsfield Mills, Manchester.**

**MONOPLANE, 45 h.p.**, practically new and thoroughly tested; must sell owing to want of space, and owner going abroad. Accept **£75**. Engine alone cost **£300**. Box No. 411.

**PROPELLERS.**

**PROPELLERS:**—Avro propellers of proven efficiency. "Pashley fitted Avro propeller, suddenly found troubles disappeared, and flew five good circuits." [AEROPLANE.] Equally good results if fitted to your machine. **A. V. ROE AND CO., Brownsfield Mills, Manchester.**

**CHAUVIÈRE'S FAMOUS "INTEGRAL" PROPELLERS**

hold all Records, used by all leading Aviators. The Best. Sole British Agents, **Geo. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C.** Telegrams: Whizzing, London. Telephone: 1707 Holborn.

"**BLACKBURN**" propellers supplied, and successfully used on all the leading motors. **THE BLACKBURN AEROPLANE CO., Leeds.**

**EMPLOYMENT.**

**AVIATION.** The British and Colonial Aeroplane Co., Limited, builders of the "**BRISTOL**" AEROPLANES, are now prepared to take a few selected premium pupils in their Works for a thorough course in Aeroplane construction. Apply, stating age, educational qualifications, etc., to **THE SECRETARY, Filton House, Bristol.**

**TUITION.**

**A.S.L. SCHOOL OF AERONAUTICS.** Tuition in all branches of aeronautical engineering; remunerative scholarships to pupils attaining certain standard of efficiency.

**A.S.L. SCHOOL OF FLYING.** Tuition on biplanes and monoplanes; numerous machines; expert instructors; every facility. **AERONAUTICAL SYNDICATE, LTD., Flying Ground, West Hendon.**

**£25** TUITION until brevet is won on Blériot and Chantier monoplanes; or **£85** including all breakages. **CHANTER, Brighton Aerodrome.**

**£50** TUITION in flying till certificate is won. Three-quarters of the prizes at Weybridge during 1911 won by **AVRO** pupils. The **AVRO** School for most thorough and all-round instruction. **A. V. ROE AND CO., Brownsfield Mills, Manchester.**

**£75** TUITION for Aviator's certificate on both Deperdussin and Blériot Monoplanes. Insurance against breakage and third party risk.

**£15** RETURNED to pupil in the event of no breakage. Perfect equipment. Personal instruction. Write for agreement form. **W. H. EWEN, Hendon Aerodrome, London, N.**

**HERBERT SPENCER Flying School, Brooklands Aerodrome, Weybridge.** Tuition and practical constructional work from **£40**. Passenger flights from **£2 2s.**

**BARRHEAD FLYING SCHOOL.** Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. **SCOTTISH AVIATION CO., 185, Hope Street, Glasgow, or Barrhead.**

**DEPERDUSSIN Aviation School at Brooklands;** thorough instruction in flying by competent staff; thorough tuition **£75**, including breakages and third party insurance. Apply to **THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD., 30, Regent Street, Piccadilly Circus, S.W.,** or at **Brooklands.**

**FILEY AERODROME.** Tuition on Blackburn or Blériot Monoplane. For particulars apply **BLACKBURN AEROPLANE CO., Leeds.**

**MISCELLANEOUS.**

**HANGARS TO LET** on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**FLYING MODELS.**

**THE** ideal Christmas present is a "Mann" Monoplane which will outlast a dozen so-called "cheap" machines. This wonderful record-breaker can again be supplied at 15/- post free by return of post, but after Dec. 31 the price will be considerably increased. Don't get left behind, order now! To advertise the sets of parts (5/6) for building a "Mann" (3 mile type), we are giving a 2 oz. bottle of "Willis" lubricant to every purchaser, and we are making the same offer to every buyer of a "Mann" geared winder (5/6), a pair of "Mann" propellers (3/6), 2 dozen yards of our 1/4 inch (3/-), or 3 dozen yards of our 1/2 inch rubber (2/9). "Willis" lubricant can also be obtained separately at 9d. per 2 oz. and 1/3 per 4 oz. bottle. Everything post free in United Kingdom, carriage forward abroad. Place your orders early to avoid the rush with **WILLIS BROS., 14 Wellington Square, Hastings.**

"**DISTINCTIVE**" Monoplanes have built up **triangular fuselage**, loaded elevator, **non-lifting tail.** Built of Silver Spruce. **French Polished.** List 1d.—**M. ROLFE, Chilton, Sudbury, Suffolk.**

**MODEL PROPELLERS—Genuine CHAUVIÈRE—8in., 10in. and 12in. diameter, always in stock.** **Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.**

**NEW** Catalogue of Model Aeroplanes. Accessories now ready. **J. BONN AND CO., LTD., 97, New Oxford Street, London, W.C.**



# THE AEROPLANE



Edited by CHAS. G. GREY. ("Aero-Amateur")

Vol. I.]

THURSDAY, DECEMBER 14th, 1911

No. 28

## The British-Built **DEPERDUSSIN** Monoplane, 1, 2, or 3-seater

### WORLD'S ALTITUDE RECORD

(With Passenger)

9,800 feet in 55 minutes, by PREVOST, on the 3rd December, on the "Deperdussin"  
3-seater Military Type, used in the final of the French Military Aeroplane Competition.

#### THE DEPERDUSSIN MONOPLANE SCHOOL AT BROOKLANDS

With more Machines than at any other Monoplane School in England.

THOROUGH TUITION ON  
DEPERDUSSIN MONOPLANE **£75.**

Including All Expenses, Breakages if any, and Third Party Insurance.

A Prize of £15 is offered to all Pupils who obtain their Pilot's  
Certificate without Breakages.

**"Deperdussin" Monoplanes, complete with Engine, from £450**

APPLY FOR PARTICULARS TO

**The British Deperdussin Aeroplane Syndicate, Ltd.,**

'Phone: 280 Gerrard.

30, REGENT STREET, LONDON, S.W.

Wire: "Monopd, London."

Works—Newington Green Rd., N.

## The All-British **GREEN** Aero Engine for **RESULTS**

The Green Engine **does** things.

It helps to make history.

1909 J. T. C. Moore-Brahazon won the "Daily Mail" £1,000 Prize, offered to the first Britisher to complete a Circular Mile flight—with a "GREEN."

1909 J. T. C. Moore-Brahazon won the first Michelin Cup for long distance flight, 17 miles—with a "GREEN."

1910 S. F. Cody won the Long Distance Michelin Competition, 182 miles—with a "GREEN."

1910 In the Patrick Alexander Competition, the only competitor to complete 24 hours' run—was a "GREEN."

1911 S. F. Cody won the Cross Country Michelin Competition, 125 miles—with a "GREEN."

1911 S. F. Cody won the Long Distance Michelin Competition, 261 miles 800 yards—with a "GREEN."

1911 For the Circuit of Great Britain one "GREEN" entered, one "GREEN" engine finished, untouched in any respect, 1,010 miles' flight.

1911 The first "Higher Certificate" was won by S. F. Cody—with a "GREEN."

**Performances like these must count**

Catalogues  
Free.

**THE GREEN ENGINE CO.,**

Sole Licences under The Green's  
Motor Patents Syndicate, Limited,  
Maker for the Patentes! The Aster Engineering Company, Limited.

**55, BERNERS STREET, LONDON, W.**

"THE AEROPLANE," DECEMBER 21, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

1<sup>d</sup>  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.  
AS A NEWSPAPER.]

THURSDAY, DECEMBER 21st, 1911.

No. 29

## ON THE PLAIN.

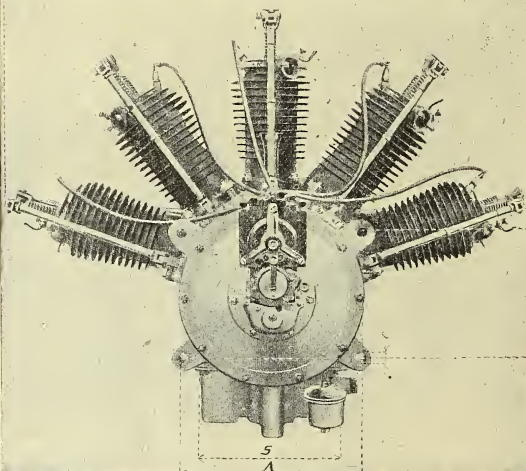
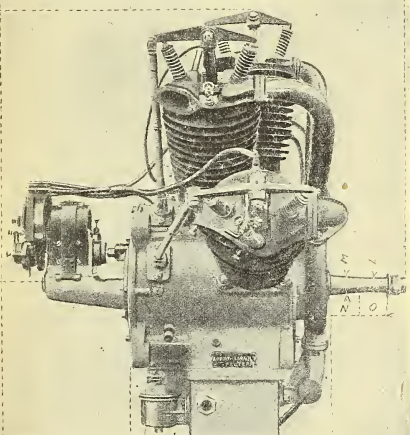


The new Bristol monoplanes, in various attitudes, flying over Salisbury Plain. Below, passing over Stonehenge. In the centre are three of the new type, with the Army Bréguet on the extreme left. The middle monoplane is fitted with an Isaacson engine, which is giving excellent results,

SMITHSONIAN INSTITUTION OCT 23 1959



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.57"	1.96"	2.67"	10.9"	.39"	2.68"	9.84"	.83"	
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	.39"	3.62"	13.8"	.91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.



## CONTENTS.

	PAGE		PAGE
THE MILITARY COMPETITION ... ..	675	THE R. AE. C. DINNER ... ..	686
QUESTIONS IN THE HOUSE ... ..	679	THE WEEK'S WORK... ..	687
AIR CURRENTS ... ..	680	THE DANGER OF DIVING ... ..	690
THE WAR OFFICE PRIZES		CORRESPONDENCE ... ..	692
By "RIVOLI" ... ..	682	TOLD IN THE OFFICE ... ..	693
THE ADJOURNED MILITARY DISCUSSION ... ..	684	CLUB NOTES ... ..	694

## The Military Competition.

The following are the conditions laid down and prizes offered by the War Office for a competition to fulfil the requirements of the accompanying specification for a military aeroplane:—

The prizes to be awarded by the War Office on the recommendation of a committee, which will judge the tests and will decide whether any machine submitted is to be subjected to any test.

A.—Prizes open to the World for Aeroplanes made in any Country:—

First prize ... .. £4,000  
Second prize ... .. 2,000

B.—Prizes open to British Subjects for Aeroplanes manufactured wholly in Great Britain, except the Engines:—

First prize ... .. £1,500  
Two second prizes ... .. 1,000 each  
Three third prizes ... .. 500 "

No competitor to take more than £5,000. The War Office to reserve the right to vary the proportions of totals under A and B between the various prizes if the merits of the machines warrant it, or to withhold any prize if there is no machine recommended for it by the Testing Committee.

The War Office to have the option of purchasing for £1,000 any machine awarded a prize.

The owners of ten machines which are submitted to all the flying tests and are not awarded a prize to receive £100 for each machine so tested.

Oil and petrol to be supplied free for the tests.

The place of delivery of aeroplanes entered for the competition will be announced later.

(Signed) E. W. D. WARD.

The specification for a military aeroplane is as follows:—

The machine must:—

(1) Be delivered in a packing case suitable for transport by rail and not exceeding 32 ft. by 9 ft. by 9 ft. The case must be fitted with eyebolts, to facilitate handling.

(2) Carry a live load of 350 lbs. in addition to its equipment of instruments, etc., with fuel and oil for 4½ hours.

(3) Fly for three hours loaded as in Clause (2) and maintain an altitude of 4,500 ft. for one hour, the first 1,000 ft. being attained at the rate of 200 ft. a minute, although a rate of rise of 300 ft. per minute is desirable.

(4) Attain a speed of not less than 55 m.p.h. in a calm, loaded as in Clause (2).

(5) Plane down to ground in a calm from not more than 1,000 ft. with engine stopped, during which time a horizontal distance of not less than 6,000 ft. must be traversed before touching.

(6) Rise without damage from long grass, clover, or harrowed land in 100 yards, in a calm, loaded as in Clause (2).

(7) Land without damage on any cultivated ground, including rough plough, in a calm, loaded as in Clause (2), and pull up within 75 yards of the point at which it first touches the ground when landing on smooth turf in a calm. It must be capable of being steered when running slowly on the ground.

(8) Be capable of change from flying trim to road transport trim, and travel either on its own wheels or on a trolley on the road; width not to exceed 10 ft.

(9) Provide accommodation for a pilot and observer, and the controls must be capable of use either by pilot or observer. Further:—

(10) The pilot's and observer's view of the country below them to front and flanks must be as open as possible, and

they should be shielded from the wind and able to communicate with one another.

(11) All parts of aeroplane must be strictly interchangeable, like parts with one another and with spares from stock.

(12) The maker shall accurately supply the following particulars, which will be verified by official test:—

(a) The h.p. and the speed given on the bench by the engine in a six hours' run.

(b) The engine weight, complete (general arrangement drawing), and whether air or water cooled.

(c) The intended flying speed.

(d) The gliding angle.

(e) Weight of entire machine.

(f) Fuel consumption per hour at declared h.p.

(g) Oil consumption per hour at declared h.p.

(h) Capacity of tanks.

(13) The engine must be capable of being started up by the pilot alone.

(14) Other desirable attributes are:—

(a) Stand still with engine running without being held. Engine preferably capable of being started from on board.

(b) Effective silencer fitted to engine.

(c) Strain on pilot as small as possible.

(d) Flexibility of speed; to allow of landings and observations being made at slow speeds if required, while reserving a high acceleration for work in strong winds.

(e) Good glider, with a wide range of safe angles of descent, to allow of choice of landing places in case of engine failure.

(f) It is desirable that the time and number of men required for the change from flying trim to road trim, or packed for transport by rail and vice versa, should be small, and these will be considered in judging the machine. The time for changing from road trim and packed condition to flying trim to include up to the moment of leaving the ground in flight, allowance being made for difficulty in starting engine.

(g) Stability and suitability for use in bad weather and in a wind averaging 25 miles per hour 30 ft. from the ground without undue risk to the pilot. Stability in flight is of great importance.

(h) The packing case for rail transport to be easily dismantled and assembled for use, and when dismantled should occupy a small space for storage.

Were it not that THE AEROPLANE has already adumbrated the above conditions, its readers might well be surprised that a department hitherto so lethargic as the War Office should have achieved so excellent a specification. Albeit, the conditions might be improved.

Examining first the prize list, one sees that it is, as was expected, somewhat small, but it must be remembered that the Government's complete programme for military aviation includes certain interim purchases from British manufacturers before the competition commences. One good point in the prize list as it stands is the provision of ten "consolation prizes" of £100 each to ten machines which, although they pass the tests, do not win the major sums. Though these small sums will not of course pay the



entrants for building their machines, they will, at any rate, cover the cost of obtaining competent pilots.

The specification itself may be regarded as almost faultless as far as it goes; one is tempted, however, to wish that some of the "desirable attributes" had been demanded as necessary. They are none of them insuperably difficult for a well-designed machine, and are all points of immense value. In fact, the specification bears to some extent the impress of a female mind in the essential importance of its postscript. It must, however, be remembered, that "conditions" and "specifications" are not "rules of the competition" so far as awarding the prizes is concerned.

#### The Engine Maker's Opportunity.

From the designer's or constructor's point of view, the first outstanding point of interest is, of course, the weight to be lifted. The specification, as was announced in Parliament on the 7th inst., deals entirely with the two-seater type, with a fuel supply for a run of four and a half hours, which means roughly, a radius of action of just under 60 miles, or, say, a total mileage of 300 miles.

This question of fuel is of immense importance. The long period of flight specified, which is practically 50 per cent. greater than that necessary in the French trials for a greater live load, will give a considerable advantage to an efficient engine, the extra weight of which will be compensated by the saving in fuel, leaving its greater reliability and strength as an outstanding advantage. Both competitions are open to British and foreign engines alike, and it is to be hoped that some of our monied aeroplane constructors will be sufficiently wise in their generation to withstand the prejudices of their pilots, and will give British engines a fair chance to show their mettle on level terms.

The minimum speed of 55 miles per hour is, if anything, a trifle low, but it certainly is better than that of 36 miles per hour imposed in the French regulations.

#### Climbing and Gliding.

The specification, on the whole, may be regarded as distinctly easy of fulfilment: but it seems likely that several of the machines will find trouble in the climbing tests, which require a height of 1,000 feet in five minutes. It will be remembered that the Deperdussin, which did the fastest climb in the French trials, only achieved a climbing speed of 180 feet per minute.

Another difficult point is the gliding angle of 1 in 6 required. One hears frequently stories of tests in which such-and-such a machine has achieved a gliding angle of 1 in 10 or more; but it is very hard to get an authenticated case of an actual glide of more than 1 in 3 or 4 in calm air.

A significant point is that dual control is specified, though nothing is said as to possible disagreement between pilot and passenger. An excellent condition is that as to facility of observation, and it is wisdom of a high and thoughtful kind which demands that both pilot and observer shall be able to see.

Among the desirable attributes, attention should be paid to the suggestion for effective silencing. This has long been recognised as essential in military machines. It was not demanded in the French competition, simply, one imagines, because it was known to be impossible to silence the rotary engine, behind which were the biggest capitalists, and, further, the French machines were intended for use as destroyers rather than as scouts. This is distinctly a point in favour of British engines. And it must be remembered that whereas every machine entered *must* pass the specification, it is the machines which possess the "desirable attributes" which will get the biggest share of marks when it comes to awarding the prizes.

The request for flexibility of speed is one which, while it may frighten some, will be recognised as excellent and feasible by the real designers—for one or two of the best machines of to-day are already capable of getting off the ground at 45 m.p.h., and yet of attaining 65 m.p.h. or more in actual flight.

#### Two Dangerous Points.

There are, however, two points in the scheme which must be "handled with tongs." Extreme rapidity of assembling, and safety at a height of 30 feet in a 25 mile an hour wind are excellent things to possess; but the testing of them is likely to be fraught with danger to pilots. A race against time in assembling a machine is extremely liable to lead to the omission of some important operation, for it forbids that careful and minute examination which all pilots worthy of the name know to be a necessity.

Taking the conditions as a whole, it is fairly obvious that the successful machine will be a monoplane or tractor biplane with an engine of 100 horse-power; and it must be noted that it is primarily a test of British aeroplanes against foreign ones, the engine being placed outside the competition.



The Etrich Single-Seater Monoplane, which has not yet been seen in this country. An Austrian Daimler engine is used.



# GRAHAME-WHITE FLYING SCHOOL,

**The London Aerodrome, Hendon, N.W.,**

*The finest equipped and most accessible Aerodrome in the United Kingdom.*

**CONSULT US—DON'T DELAY.**

**COMMENCE NOW**

**A COURSE OF TUITION AT THE BEST SCHOOL,**

**WITH THE**

**BEST METHODS, MACHINES AND MECHANICS,**

**When Your Success During 1912 will be Certain.**

*Among the many successful Pilots trained at our school are the following:—*

**J. ARMSTRONG DREXEL** (Leading Amateur).

**CLEMENT H CRESSWELL**, Late Chief Pilot,  
Grahame-White School (1st U.K. Aerial Postman).

**CHAS. HUBERT**, Pilot, Grahame-White School  
(1st U.K. Aerial Postman).

**J. V. MARTIN**, Chief Pilot-Constructor, Queen  
Aeroplane Co., New York, U.S.A.

**LEWIS TURNER**, Chief Pilot, Kennedy Aviation  
Co., St. Petersburg, Russia.

**W. RIDLEY-PRENTICE**, Manager, The Aero-  
nautical Syndicate, Ltd., Hendon.

**J. L. TRAVERS**, Engineer-Pilot, Messrs. Short Bros.,  
Eastchurch.

**E. F. DRIVER**, Pilot, The African Aviation Syndicate,  
Ltd. (1st U.K. Aerial Postman).

**NAVAL LIEUT. O. DAHLBECK**, Chief Pilot,  
Swedish Navy.

**W. C. ENGLAND**, Managing Director, Burmah  
Aeroplane Syndicate, Rangoon.

**MRS. C. DE BEAUVOIR STOCKS** (First Lady Pilot to carry a Lady Passenger).

Write for terms and particulars to—

**THE GRAHAME - WHITE AVIATION CO., LTD.,**

PROPRIETORS OF

'Phone—  
KINGSBURY 22.

**THE LONDON AERODROME, HENDON, N.W.**

Wires—"VOLPLANE" or  
'CLAUDIGRAM, LONDON.'



This is not so unfair as it seems at first sight. To build a first 100-horse engine costs probably £3,000 or more, even supposing the maker to be already successful with engines of less power; and it is hardly likely that any engine-maker will incur this expense on the chance of winning only a share of even the international prize—and it is fairly certain that no foreign entrant will use a British engine.

This may seem hard on the British engine-maker. But the cardinal point of the whole matter is that the competition is practically a test for honour and glory, and that the orders which carry the hard cash are not, so far as one can gather, of necessity to be given to prize-winners, but will be distributed among British-built machines which have distinguished themselves in the competition.

The conditions are so sound that they form a real test, so that a machine which does well in them is sure to be a really good military two-seater. Therefore THE AEROPLANE's advice to constructors is to strain every nerve in the competition, for orders will certainly be allotted to all who make a good show in the trials.

It is by no means certain that the two international prizes will go to foreign competitors, for, in the first place, the prizes alone are not big enough to tempt a foreign constructor to enter, knowing, as he does, that if he wants to secure orders after winning he must open a factory in Great Britain, or arrange to have his machines built here. And, the competition being for two-seaters, it means that most of the foreign constructors must build special machines, for the big three-seaters could not climb fast enough for our test, and few foreign constructors have two-seaters, at the moment, as good as three or four British constructors have.

The only advantage the foreigners have is that a few of them already possess engines of 100 h.p. while our men will have to buy such engines. But, for reasons already noted, the specification practically relegates the 100 h.p. rotary engine into its proper position as merely one of many engines, and there seems every possibility for a British engine to beat it squarely on its merits, and the British engineer should do his best to achieve this end.

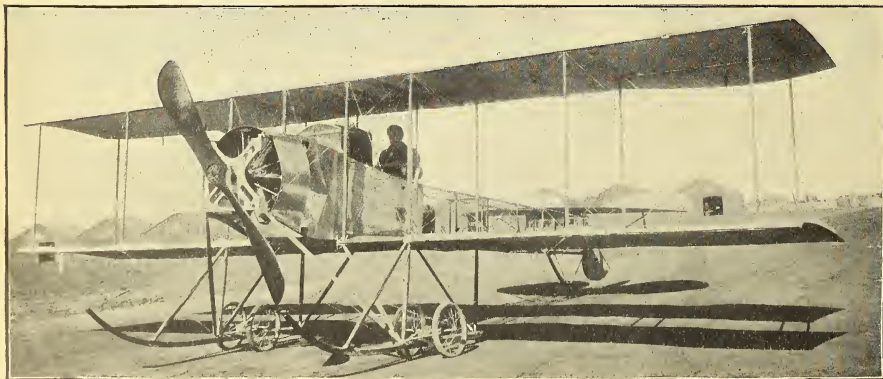
#### More Information Needed.

There only remains now to learn the rules governing the competition, the composition and competence of the judging committee, and the exact date on which the work of testing is to start. Let us hope that these will soon be decided so that our constructors may be able to make all their preparations in good time and avoid a fiasco such as occurred in the French Military Trials, when machines were still being built in their sheds on the ground after the start of the competition.

#### The Judges.

The competence of the judging committee is really the thing on which most depends. If that committee is composed of practical men, such as officers of the Aeroplane Company of the Air Battalion, together with other officers of experience and discernment of the type of General Ruck, General Henderson, Colonel Smeaton, or Captain Sykes, all will be well. But if political or official considerations include officials of the Balloon Factory, or National Physical Laboratory, or members of those unuseful and hardly even ornamental bodies, the Government Advisory Committee for Aeronautics, or the Parliamentary Committee for Aerial Defence, some egregious error or other may very easily be made. This competition is an affair purely for the soldier-aviator, and however wise the theoretician may be, a year or so after the event, he had better give place to the practical man on this particular occasion. Practical men evidently drew up, or at any rate inspired, the specifications; let us hope that the judging will be equally practical.

Meantime, the preparations for the competition will create great activity among constructors, and in a few months' time there should be a big demand for both mechanics and pilots of recognised ability and steadiness. Already, important firms, who have hitherto looked askance on aeroplanes and everything connected with them, are beginning to think of building machines and, entering them for the competition, existing firms are getting ready for considerable expansion, and altogether, all signs point to the fact that there is a good time coming in the not far distant future.



The 100 h.p. tractor biplane, built by Mr. J. V. Martin, and referred to on page 693. The machine has ailerons working both up and down, to balance head resistance.

## Questions in the House.

## Indian Army Aeroplanes.

(Tuesday, December 12th.) (Oral Answers.)

SIR HILDRED CARLILE asked if any arrangements have been made for the instruction in India in practical aeroplanism of officers belonging to the Indian Army?

MR. MONTAGU: The subject of aviation is now under the consideration of the Government of India, whose proposals are awaited.

## Army Air Battalion.

MR. SANDYS asked how many officers belonging to the permanent establishment of the Air Battalion are at present engaged in aeroplane work on Salisbury Plain?

THE UNDER-SECRETARY OF STATE FOR WAR (COLONEL SEELY): Three officers of the Air Battalion and two officers attached are at present engaged on aeroplane work at Salisbury Plain.

MR. SANDYS: Are the two officers attached included in the permanent establishment to which the question relates?

COLONEL SEELY: I think not. I would not like to say off-hand.

MR. SANDYS: That is to say there are three officers now engaged in work on Salisbury Plain belonging to the permanent establishment?

COLONEL SEELY: So I think.

MR. SANDYS: Is there a proposal to increase that number?

COLONEL SEELY: Yes, up to a hundred officers.

MR. SANDYS: Are there a hundred officers in the permanent establishment?

COLONEL SEELY: No, I must not be taken as saying that.

MR. SPEAKER: The hon. Member has managed to ask four supplementary questions, all separate questions, to which he has got full answers.

MR. SANDYS asked whether any cross-country flights have been undertaken by officers of the Air Battalion during the last six months acting under official instructions; if so, whether their expenses in connection with such flights have been refunded; and, if so, what sum has been expended in such manner?

COLONEL SEELY: Several cross-country flights have been undertaken by officers of the Air Battalion during the last six months. Claims for expenses are for the consideration of the local military authorities, and it is understood that certain claims are now being so considered.

MR. SANDYS asked whether an engineer officer engaged in aviation work receives no additional pay; whether an officer of the Guards on joining the Air Battalion loses his Guards' allowance; and, if so, whether steps will be taken in framing the proposed pay regulations for the Air Battalion to deal with these cases?

MR. TENNANT: In regard to the first and second parts of the question the facts, under present arrangements, are as stated. As regards the last part of the question, these cases will be considered.

MR. SANDYS asked whether it is proposed to form an aviation corps apart from the Royal Engineers and under separate administration?

COLONEL SEELY: I am not in a position to make any further statement on this subject at present.

[It will have to be done sooner or later, and the sooner the better.—ED.]

MR. SANDYS asked whether officers who obtained an Aero Club certificate before the issue of the new regulations will be entitled to the allowance of £75?

MR. TENNANT: If they are recommended and selected for aviation work they will be entitled to the allowance.

[Which apparently means that they have gambled their school fees on their chance of being "selected." However, the editor is assured that all those already possessing certificates will get their £75.—ED.]

MR. SANDYS asked whether, if, as is officially stated, 100 officers are to pass through a short aviation course, it is the intention of the Government on mobilisation to withdraw such officers from their regiments for the purpose of forming an aviation corps; and, if so, how the deficiency in regimental officers is to be made good?

SIR HILDRED CARLILE asked whether the Army Council has sanctioned the proposed system whereby, on the outbreak of hostilities, officers who are also aeroplanists, would, when their services are most needed, be permanently withdrawn from the regiments to which they belong?

COLONEL SEELY: The officers in question will be withdrawn from their regiments on mobilisation, and vacancies in the regiments will be dealt with in the usual way when officers are withdrawn for staff duties.

MARQUESS OF TULLIBARDINE: If any of these officers break their necks or get injured otherwise, will any allowance be given?

COLONEL SEELY: I hope that there will not be very many fatal accidents. The whole question of compensation for injury is under careful consideration.

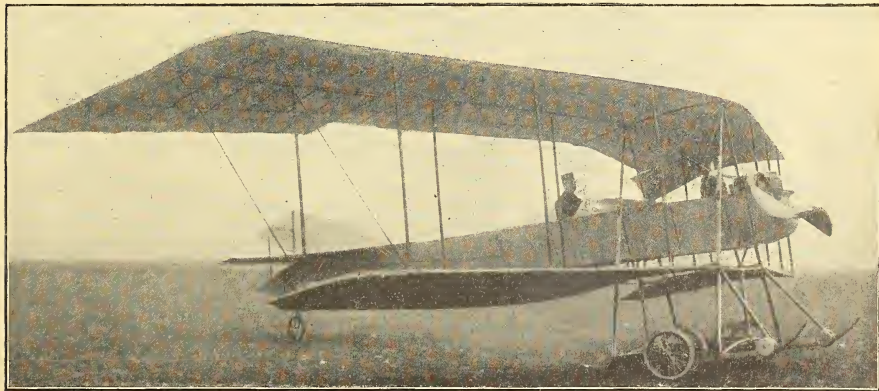
## Army Aeroplanes.

(Thursday, December 14th.) (Oral Answers.)

MR. JOYNSON-HICKS asked how many of the twelve effective aeroplanes owned by the British Army can fly sixty miles per hour without the aid of a following wind; and how many are of the old box-kite type of biplane, which are unsafe in a strong wind?

COLONEL SEELY: The answer to the first part of the question is two, to the second, none.

[Colonel Seely's answer to the second part of the question is worthy of note. The reply evidently means that, in the estimation of the official who supplied the answer, a box-kite biplane can be flown with safety in a strong wind. As a matter of hard fact, the suggestion contained in Mr. Joynton-Hicks' question, that there are eight or nine box-kites only suitable for fine weather, is absolutely true.—ED. THE AEROPLANE.]



The Lohner-Daimler Biplane, an Austrian machine with an Austrian Daimler engine. As may be seen, it is a kind of Dunne-Avro-Antoinette, and it is known as the "Pfeil-Flieger, from its arrow shaped planes.



## AIR CURRENTS.

## Xmas Hints.

In view of the forthcoming Christmas festivities the following hints and suggestions may prove useful to simple-minded aviators who intend dining out with people who have more enthusiasm for the noble art than regard for consequences.

**TURKEY.**—The entrance of this dish is an excellent opportunity for showing off your knowledge as to how things fly (the less you know about the subject the more you will probably be able to impress your audience). Any remarks as to the untimely end of winged craft should be treated with (a) contempt, (b) unconcern, according to your frame of mind.

**ROAST BEEF.**—As you will probably decline invitations to "roast beef" families, it is only necessary to say that if you should find yourself face to face with a portion of bovine, it is best to swoon gently on to the girl's shoulder beside you which happens to look most shock-absorbing in appearance, and murmur faintly that cattle always make you feel queer since your terrible accident, etc.

**GRAVY AND BREAD SAUCE.**—If there is a small boy in the house it is well to be on the look-out for obstacles in the sauce such as wire-trainers, which are unpleasant to bite on, also for traces of lubricating oil in the gravy, which is not commended as suitable for internal purposes.

**CHRISTMAS PUDDING.**—In order to delight your audience and to live up to your reputation generally be sure to make subtle remarks about its aspect ratio, and the approximate strength of its under-carriage. N.B.—Be perfectly certain that it is illuminated with *brandy* and *not* petrol in the mistaken idea of doing you honour.

**MINCE PIES.**—Be careful that these are made with the proper camber, otherwise in eating them whole you may require banging on the back to relieve your inlet valve, which is undignified.

**ICES.**—These are slippery things at the best, and require more strength of mind to manage properly than you are likely to possess at this period. If you should have a side-slip, and the ice makes a tail dive on to your neighbour's best-but-one pale blue satin frock, leave the *débris* to the head mechanic (butler), and remark smilingly: "That's just how I made my sensational *vol plané* at the Sloshen-in-the-Mud Meeting."

**CHARADES.**—If you are strong-minded don't, and if you are good-natured make the best of it. You will probably be required to act some or all of the following parts:—

(a) Gnome engine. (This part requires careful handling, as you are liable to be mistaken for the domestic cat in your efforts to be realistic.)

(b) An aeroplane accident. (This is best done outside in the passage with the Crown Derby dinner service and any smashable *bric-a-brac* handy. If there are any golfing men in the house they might assist with a conversational obligato—the host will probably help too when he finds out.)

(c) Grahame-White. (Do not attempt this part if you have red hair, a turn-up nose, or are under four feet high. You will only have nasty remarks made about your limitations.)

(d) An "airship," or dirigible. (Look up the next train home very ostentatiously, and give loud orders in the hall for your things to be packed. If nobody takes any notice, pretend you haven't said anything, as gracefully as possible, and stop.)

**YOU PLAINLY.**—This is a game which you should introduce at any party where things seem somewhat lacking in "go." Secure all the valuable tea-trays in the house, and adjourn to the top of the stairs with the primmest and oldest members of the house-party. Place each on a tray and shove off one after another as quickly as possible. If they have any breath or sense left to complain, you can always say your foot slipped and "it isn't a bit like that, really." They will probably not wish to test the *proper* thing, so you are fairly safe.

This is calculated to unbend the stiffest of gatherings.

D. M. H.

The London General Omnibus Company are advertising: "Travel above ground! We carry you all the way." Though this advertisement has been appearing for some time, we have not yet seen any of the aerial 'buses. Why this unseemly delay?

A friend (or an enemy) suggests that possibly the above advertisement may be due to the fact that the new "Type B" 'buses are so much lighter and smoother running than the old ones that the passengers may imagine themselves to be traveling "in newBbus."

## Fireside Chat.

Yes, dear girls, grandmamma is always delighted to help and advise you. Come and tell me all your little difficulties.

Well, Maudie? You find your aeroplane rather cumbersome to take with you when travelling, and porters are apt to grumble at the weight of the case? You really must see a dear little machine called the "Aerolite," which a Manchester friend of mine is bringing out. It is so ingeniously designed that all the planes can be packed in an ordinary suit-case, while the fuselage folds up to look like a set of golf clubs; so you have only to send the engine by "Luggage in advance" and you can quite easily take the rest in the carriage with you.

Now here is Phyllis, quite worried because Edward has asked her what she would like for a Christmas present, and as she has already got everything she wants in the world (including Edward) she can't think what to say. I know the very thing, Phyllis, and it is another of my clever friend's ideas—a radiator and tea-basket combined, arranged so that the engine boils the kettle for you. Tell Edward to have one fitted to the two-seater, and then, when you go out in it together, you can enjoy a delicious cup of afternoon tea a thousand feet up in the air. Of course, this will not work with a rotary engine, which shows how useless they really are; so, if Edward has not yet got rid of his N.B.G. (which you know, my dears, stands for Non-British Gimcrack), he had better give it to me for my January rummage sale, and put in a "Brown" instead.

Laura wants to work some pretty embroidery on the fabric of her new machine. This is a very tasteful idea; but she must be careful, first, to do all the work before the material is fixed in its place, as afterwards it is rather awkward to handle, and also to use only fast colours. You will all remember that Mabel Pennfeather covered the whole of her Military Bristol with an all-over design of wild flowers, and the effect was really beautiful. Poor Mabel! she had only been out in it twice when she was caught in a thunderstorm and soaked through, and all the different colours ran into each other; and now it doesn't look pretty one bit.

No, Rosie; I certainly cannot advise you to send Mr. Rudolf Engel a pair of Berlin wool-work slippers as a Christmas gift, and I am surprised a good little girl should think of such a thing. Besides, how do you know he would wear them? You must not expect an aviator (though, no doubt, they are all excellent, pious young men) to have *exactly* the same tastes as a curate.

Your idea is simply charming, Muriel, and will make a delightful surprise for Roger when he comes home on Christmas Eve. Make up some nice long trails of evergreens, and festoon them round the edges of the wings of his machine, and also along the fuselage, fastening them with plenty of good strong brass-headed nails. You can ornament the *cloche* with a holly wreath, wired on, and a castor-oil plant tied to the engine—would be a really happy thought. Then get a lot of cotton-wool and spread over the planes, and anywhere else you can make it stick on—a little Secotine is very helpful—to represent snow, and, finally, sprinkle the whole thoroughly well with that pretty sparkly frosting powder. The effect will be perfectly delightful, and grandmamma is only sorry she will not hear what Roger says when he sees it.—M.L.E.

\* \* \* \* \*

In pleasing contrast to the present slump in aviators in England comes the following paragraph from the *Evening News*:—"The Turkish Government is believed to have been advertising for aviators in Europe."

In my youth when the season of Christmas

Approached, and the gay festive board

To my prejudiced sight gave the perfect delight

That plenty to eat can afford,

As I gazed on the various dishes,

They asked what my preference might be—

You're right in belief that I shunned the roast beef,

It was turkey for me.

And now I am older and wiser,

And a "knot" in the kingdom of flight,

Imagine the joy in the heart of this boy

When I read in my paper to-night

That the Turkish War Office was looking

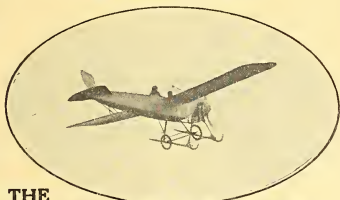
For men that could fly. So you see,

I am off there to-day, without further delay,

It is Turkey for me!

D. M. HAWARD.

Over 60 m.p.h.  
carrying passenger.



THE  
"BRISTOL"

MILITARY (Two-seater) MONOPLANE

THE ONLY BRITISH MACHINE  
AT THE FRENCH SALON.

SEE STAND No. 27.

The "Bristol" Flying Schools secure the best results

The British & Colonial Aeroplane Co., Ltd.,  
FILTON HOUSE, BRISTOL.

## REPAIRS

To the 'Gnôme or  
any other make of  
. . . aero engine . . .

Damaged engines rebuilt,  
and nothing but work-  
manship of the highest  
possible standard, by

### HESSE & SAVORY

ENGINEERS

TEDDINGTON, S.W.

## The British-Built **DEPERDUSSIN** Monoplane. 1, 2, or 3-seater

### WORLD'S ALTITUDE RECORD

(With Passenger)

9,800 feet in 55 minutes, by PREVOST, on the 3rd December, on the "Deperdussin"  
3-seater Military Type, used in the final of the French Military Aeroplane Competition.

#### THE DEPERDUSSIN MONOPLANE SCHOOL AT BROOKLANDS

With more Machines than at any other Monoplane School in England.

THOROUGH TUITION ON  
DEPERDUSSIN MONOPLANE

**£75.**

Including All Expenses, Breakages if any, and Third Party Insurance.

A Prize of £15 is offered to all Pupils who obtain their Pilot's  
Certificate without Breakages.

**"Deperdussin" Monoplanes, complete with Engine, from £450**

APPLY FOR PARTICULARS TO :

**The British Deperdussin Aeroplane Syndicate, Ltd.,**

Phone : 280 Gerrard,  
& 130 Byfleet.

30, REGENT STREET, LONDON, S.W.  
Works - Newington Green Rd., N.

Wire :  
"Monopod, London."



## The War Office Prizes.

By "RIVOLI"

*Un its leading article this week, THE AEROPLANE has endeavoured to point out what is good in the War Office Specification. Our friend "Rivoli" gives another point of view, and as he is a thoroughly practical man his views are worthy of note.—Ed.]*

The long-expected conditions for the competition for aeroplanes for the Army have now been published. It is difficult to approach the task of criticising them in a serious spirit. One has much the same feeling as a man would have who is asked to criticise a foreigner's broken English—a kind of let-the-poor-fellow-alone-he-can't-help-it feeling. But since the War Office has presumably framed the tests with a genuine desire to please, and not with a view to providing humorous example of British wit, the following comments on them may be of interest.

"The committee will decide whether any machine submitted is to be subjected to the tests." Very well. The manufacturer of "Neptune" aeroplanes submits a machine. What considerations will guide the committee as to whether his machine is to be subjected to the tests? Will the committee perhaps say, "We don't like 'Neptunes'; we do not propose to allow you to compete." Or will they say, "Certainly, Mr. Neptune, walk right in; we know your machines; you are the winner. Here is a cheque for £4,000." How can there be any question as to whether any machine submitted will be subjected to the tests? Surely, once the competition is declared open, the committee must test any machine that presents itself? Otherwise, where does the competition come in?

"A.—Prize open to the world for aeroplanes made in any country: first prize, £4,000." Does any sane person suppose that a foreign manufacturer is going to put up the money for designing, experimenting with, and building at least two complete machines, and bringing them to England, with a staff of mechanics and pilots, for a chance of gaining £4,000? I can see the smirk with which foreign manufacturers will greet this announcement!

Let us consider, sanely, their expenses. The conditions (sketchy as they are) make it clear from the outset that no design at present current can hope to fulfil them. Very well. Then constructors have to first begin experimenting—most people have an inkling of what that costs. Then their designs have to be set to work, and get out plans for a tentative machine; this must be built, tested, smashed time after time, altered, and possibly scrapped. If it avoids this last adventure, two duplicates must be built, one or two spare engines procured, and the whole outfit shipped to England. The works must be upset while all this is going on; the steady supply of approved types to their own Government must be interfered with to hurry on this work; and then, when the machines are brought over, the works must be denuded of their best mechanics to tend them.

Then comes the question of pilots. Pilots are cheap, you say. Yes; but not competition pilots. Vedrines, Prévost, Renaux and Co. are not cheap, and the conditions are not framed to permit of cheap pilots being employed. What about the three hours' flight, the flight in a 25-mile wind, the flight for one hour at 4,500 ft. height? Nobody knows his own value better than a French pilot, and it would surprise me if he does not strike an uncommonly good bargain with his employer! These mechanics and pilots, with their manager, have to be transferred to England, and maintained there during the competition.

And all this for a chance of winning £4,000. And not even that. Listen to this: "The War Office reserves the right of varying the proportions of the totals under the two headings, if the machines warrant it, or to withhold any prizes if there is no machine recommended by the test committee!" In other words, the War Office can make two pretty speeches to the constructor of the machine which has come out on top:—

"You are the winner, but your machine does not warrant it; therefore, you only get £200, the balance of £3,800 we award to the maker of 'Neptune' machines, they have such pretty green tails."

Or else:—

"You are the winner, but we do not propose to pay you any prize; we—ah—do not recommend your machine. We have pleasure, however, in handing you £100, as yours is one of the first ten machines submitted to the tests."

### The Chosen Ten.

That brings us to the next point: "The owners of ten machines which are not awarded a prize are to receive £100 for each machine so tested."

This represents £1,000 clean thrown away. The £100 does not offer the slightest inducement to a manufacturer before the competition nor the slightest recompense after it. Can you imagine the spectacle of the manufacturer, after spending about three or four thousand pounds, stepping up to receive (if he is in the Lucky Ten) his cheque for £100, with an admonition not to spend it all on champagne in celebration of the occasion.

"Oil and petrol is to be supplied free for the purpose of the tests." Ye gods! Did anybody, at the Reims trials, notice in the Nieuport sheds, a quiet little man, with a rough-haired, dark-tempered (I know, because he tried to bite me) dog? That man, or his substitutes, never left the shed for one moment, day or night, during the trials, and facsimiles of him were to be found in all the other makers' sheds. He was a police detective, with a police dog, hired specially to watch over the machine, its spares, oils, and petrol.

Imagination fails me when I try to see a manufacturer respectfully walk up, and with a fine military salute, crave a few gallons of Government oil and petrol. "What sort," says a pompous Sergeant-Major-on-Oil-Duty. "Oh, any old sort, your highness," says the manufacturer, with a respectful tweak of his forelock, and gets served out with a barrel of "Oil, Rangoon, cleaning rifles," which has got in with the aeroplane oil by mistake.

Woe to the Frenchman who says his aeroplane will only run on automobile spirit! "Carn't ave no orty-wotery-yer-call-it 'ere," says the S.M.-on-Oil-Duty, tapping his boot with his cane, "ther as wants orty-what-was-it?" (an 'ther's bin a good few 'ere to-day) doesn't get recommended by the committee for a prize, so you 'ook it, Frenchy."

"(1) Be delivered in a packing-case, suitable for transport by rail, and not exceeding 32 ft. by 6 ft. by 9 ft." There is not an aeroplane that has ever been made that could not be delivered in such a packing-case—if no condition is made as to time of re-erection; and no such condition is made. The W.O. can't say afterwards, "Oh, but we meant this, and that"; there the condition stands. So get your hatchets ready for Test 1, manufacturers!

"(2) Carry a live load of 350 lbs. in addition to its equipment of instruments, etc." Why this "in addition"? A live load is a live load, and that's the end of it; no instruments are "live" that I have ever come across, except the business terminal of a coil.

"With fuel and oil for 4½ hours." Who will determine this quantity—the manufacturer? I see in clause 12 (f) that he shall declare the fuel consumption of his engine, and that this declaration shall be verified by official test. When—during the three hours' flight in which he has to climb to and maintain 4,500 ft.? Or do the committee expect to get the information from a bench-test?

"3. Fly for three hours, maintaining an altitude of 4,500 ft. for one hour." This is not a test of the machine at all—it is an endurance test for pilots.

I may be peculiar, but it does not recommend a machine to me any more if the engine holds out for three hours than for one hour. In either case, the engine may be at its last gasp at the end of the period.

After the engine has got properly warmed up (for which a period of one hour would be an extremely liberal allowance) it would not impress me in the least to see the machine going on fluttering round the aerodrome. The same applies to the one hour at 4,500 ft. By all means, let rate of climbing be taken into account, but once the pilot has coaxed his machine up to 4,500 ft., what in the name of common-sense is the meaning of keeping him buzzing round for another hour? Does the committee think it is testing anything except the pilot by doing this?

"4. Attain a speed of 55 miles an hour." That is very nice, and I have no fault to find with it, except that the rule does not say whether the test is to be made over a closed course or a straight line—a somewhat important point.

"5. Plane down to ground from not more than 1,000 ft., with engine stopped, during which time a horizontal distance of not less than 6,000 ft. must be traversed before touching." An excellent test, but impossible to carry out without bringing about the most acrimonious disputes between manufacturers and committee. Assuming that the barograph will fix the

height of the machine to be not more than 1,000 ft., who is to say over what point on the ground the engine is stopped? And, if it is impossible to determine that point, how can the horizontal distance be measured over which the *vol plané* has taken place?

The thing is absurd. I notice that no provision is made for the machine being flown "weighted as in clause 2"; is this intentional, or is it merely a part of the general incoherence? To paraphrase a somewhat well-known quotation, "Weight does make a difference, Davy!"

"6 and 7. Rising from and landing on grass, clover, and rough plough." These are good tests, but "who shall find snow in June"? In other words, is the Government going to plough up a tract of Salisbury Plain (ask the G.O.C., Southern Command!), or is it going to purchase a field of standing green wheat and plough it up?

"Capable of being steered when running slowly on the ground." What on earth does this mean? A condition is a condition, and must be hard and fast. What does slowly mean? As slow as a tortoise or as slow as the second horse which we didn't back for a place? If this is a "condition," why not introduce a condition that machines must be "as long as a piece of string," or "about the size of anything big"? I happen to know a certain humorous work in which the definition of a "hill" is given as "a thing which is higher than a small hill and not so high as a high hill." I commend this as a model to the War Office in framing future "conditions."

"8. Be capable of change from flying trim to road transport trim." Here I have visions of the manufacturers whetting their little axes again: or come the wings in a twinkling, crash! the heaviest mechanic first sits on them and then heaves them into the nearest ditch—and behold our machine in "road transport trim," and in record time. "Oh, but," says the committee, "I don't think you're quite—er—playing the game, you know." "What is the game, then?" says the manufacturer. "Don't talk to me like that," says the committee; "I think you're awfully rude, and I shan't recommend you for a prize; your machine doesn't warrant it. And, now I come to think of it, you shan't have the £100 champagne money either."

"9. The pilots' and observers' view of the country below them and to front and flanks must be as open as possible." Same again, what sort of a condition is this—what does "as possible" mean? By this time the manufacturer (a long-

suffering man) is saying, "Look here, for heaven's sake, tell us what we are to do, and we'll do it; but don't give us any more 'slowly' or 'as possible.'"

"11. All parts of aeroplane must be strictly interchangeable, like parts with one another." I don't believe that I am so dense that I can't read sense into plain English, but for the life of me I can't make out what this means. Does it mean, for instance, that a left wing can be hung on to the right side? Or that the petrol can be poured into the oil tank, and vice versa? I give it up.

"12. The makers shall accurately supply the following particulars, which will be verified by official test." Why "accurately." A certain general once earned undying fame by issuing a series of seven orders. At the foot of these he appended an eighth order, which read: "The above orders must be obeyed."

The word "accurately" is about as useful as the eighth order. In any case, why should the manufacturer supply the information at all, if it is going to be verified by official test? So that the committee can have what is vulgarly called a "snack" at any machine whose information is not "accurate"? I suppose this would be one of the occasions mentioned in the preamble to the conditions on which the committee would withhold a prize by not recommending a machine!

I see that the maker has to inform the committee whether the engine is air-cooled or water-cooled. The grave responsibility of determining this knotty point is thus taken off the shoulders of the committee. Oh, if only Mr. Heath Robinson would draw a picture of the War Office Committee carrying out a series of experiments on a machine submitted by a manufacturer with a view to settling this difficult question! "Other desirable attributes." These I need not go into. The War Office effusion is called a "Competition." "Desirable attributes" do not, and cannot, enter into competition conditions. A competition should mean just this: "Here are things to do. Either do them or not. Whichever you does the most comes out on top." The compilers of the test have been in such a hurry to throw these rules together that they have lost sight of the fact that they are drawing up the rules of a competition. What they have produced, might pass, with an intelligent person, for a vague and sketchy description of what an aeroplane might conceivably be expected to be; but, as rules for a competition, the effect is—well, ask the manufacturers.

### The Royal Aero Club.

At the committee meeting on December 6th the following new members were elected: Amyas Eden Borton and Frederick Handley Page.

The following aviators' certificates were granted: 165. Major R. L. Benwell, I.A. (Bristol, Brooklands). 166. Captain Robert Gordon, R.M.L.I. (Bristol, Brooklands).

The following special certificates were granted: 1. S. F. Cody (Cody biplane). Cross-country course: Laffan's Plain to Shrewton, Wilts, and back. 2. James Valentine (Bristol monoplane). Cross-country course: Salisbury to Laffan's Plain and back. 3. Captain J. D. B. Fulton, R.F.A. (Bristol biplane). Cross-country course: Salisbury to Laffan's Plain and back.

F.A.I. Conference.—Aviators' Certificates: At the conference held in Rome last month the question of reducing the age limit for aviators' certificates was considered, and it was decided to make no alteration in the existing rules, which stipulate that the candidate must be at least 18 years of age.

Gordon-Bennett Aviation Cup.—The cup having been won by America, the race next year will take place in the United States. The course is to be a closed circuit, with a minimum of 5 kilometres, and the total distance to be flown is 200 kilometres. It was unanimously decided that hydroplanes should be admitted to the contest. The proposition of the Royal Aero Club for a cross-country course was not agreed to.

Law Committee.—It was decided to establish a Law Committee of the Federation. On this committee two representatives—one of them a lawyer and the other an aviator—will be appointed by each of the clubs belonging to the Federation. The exact scope of the committee's activities is to be decided upon at its first meeting, which will be held in Brussels early in the new year. A unanimous vote of thanks was passed to the chairman (Mr. Roger W. Wallace, K.C.) and Captain Bertram Dickson, who attended the Rome Conference on behalf of the Royal Aero Club.

Aeronautical Bodies.—Letter from the Aerial League of

the British Empire withdrawing from the tripartite agreement of May 3rd, 1909, was read and noted. This agreement was drawn up in May, 1909, defining the spheres of action of the three aeronautical bodies, viz.: The Aeronautical Society, the Aerial League of the British Empire, and the Royal Aero Club.

Deputation to the Under-Secretary of State for War.—Sir Charles Rose reported the deputation to the Under-Secretary for War at the House of Commons on the 5th inst. A unanimous vote of thanks was passed to Sir Charles Rose for the kind services he rendered to the Manufacturers' Committee and for introducing the deputation to Colonel Seely.

At the meeting of the committee held on the 12th inst. the following new members were elected: Edward Richard Adams, Francis Evelyn Bran, Henry Franklyn Browne, Major F. M. Carleton, Miss Eleanor Josephine Trehaque Davies, and George Ambrose Lloyd, M.P.

The following aviators' certificates were granted: 167. J. D. P. Chattaway (Deperdussin monoplane, Brooklands). 168. C. F. M. Chambers (Valkyrie monoplane, Hendon).

Circuit of Britain.—The committee of the Royal Aero Club is making a further and final distribution of £12 10s. to each competitor in the above competition, and the cheques will be drawn on the 19th inst. It was previously announced that the committee would return to competitors any balance of the entry fees in hand after payment of the expenses. A sum of £40 each has been refunded, and this final payment will make a total distribution of £52 10s. to each competitor.—HAROLD E. PERRIN (Secretary).

### Last Week's Frontispiece.

THE AEROPLANE begs to convey its thanks for the close attention which has enabled various of its readers to challenge the accuracy of the photographs of Mr. Gilmour on the first page of the issue of December 14th. The reason why the machine is shown with extensions in the landing is that it had extensions. These were removed later on, and the lower photograph shows the machine after the removal.



## The Resumed Military Discussion.

The military discussion at the Royal United Services Institute was continued on December 18th, with General R. M. Ruck in the chair. With him on the platform were Colonel Seely, the Under-Secretary for War; Prince Louis of Battenberg, the Second Sea Lord; and General Sir Arthur Paget. General Ruck, before opening the discussion, said that the Council of the Aeronautical Society had asked him to announce that Lord Bray was creating a memorial to Pilcher, the originator of gliding in this country. Twenty-five pounds was still needed to finish the memorial, and the secretary would be glad to receive subscriptions.

The CHAIRMAN then referred to the lamentable loss of life, which, however, he thought, must take place in the conquest of the air. He asked if we had done our best to minimise that loss. No single body could deal with the subject, and he suggested a committee should be formed under the auspices of the Aero Club and Aeronautical Society to investigate the causes of accidents. He thought it was the more necessary as so many future aviators would be flying in the execution of their duty.

MAJOR RADCLIFFE, of the General Staff, then opened the discussion. He agreed with speakers at the last meeting who said that soldiers must limit their demands from constructors to vital necessities. Designers said that if more was demanded of machines, different types would be necessary. He, personally, regarded the aeroplane primarily as a scout, for strategic, or long distance, and tactical, or short distance, reconnaissance.

He then gave a description of Napoleon's advance from the Rhine by Strasburg and Nuremberg, in October, 1805, which resulted in General Mack and the bulk of the Austrian army being shut up in Ulm, and then showed how, if the Austrians had had aeroplanes capable of doing out and home journeys to points 100 miles away, all the French movements would have been known. Reasoning from this he wanted extreme radius of action, in order to get early news of the enemy's advance. "Wireless," was, he thought, out of the question, one had better have big speed, and get back with the news. For such work one would trust entirely to speed, and one's chance of escape would be increased by having a silent engine. Such machines would start from a fortress where there would be proper landing ground, and so machines need not have heavy chassis. A very experienced observer was not needed, for an army corps covered thirty miles of road. It was not easily missed, and so long as the scout could tell roughly the zone covered, and the length of front of the enemy, it would do.

In the second class of scouting, MAJOR RADCLIFFE said there would not be so far to go, but more detail would be needed. He instanced the operations west of Metz on August 15th and 16th, 1870, when a single German army corps ran into the whole French army at Gravelotte.

In such cases a scout should tell whether a force was attacking or defending, advancing or retreating, where guns were concealed, and so forth. Here more time was required, and more skilled observers were needed. The scout could also reckon on interference from the enemy. At 3,000 feet, he learned, one could risk the effect of fire from the ground, but defence would be needed against other aeroplanes, therefore they wanted guns and armour, but if that meant too much weight, he had always been taught it was more blessed to give than to receive, so he would "chuck the armour and go for the weapon." Such a machine would have no home comforts in the way of landing-places, so one wanted strength, stability, and weight-carrying capacity more than speed, but one wanted handiness and manoeuvring power. He therefore asked the constructors whether they could combine all these qualities in one type, or whether they wanted to specialise.

At the conclusion of Major Radcliffe's paper, the CHAIRMAN, after referring very cordially to it, announced that it was proposed to carry on the meeting on somewhat unusual lines. He proposed to take some of the points left unsettled at the previous meeting, and to ask for the opinions of various experts on each point.

He recalled that the sense of the previous meeting seemed to be in favour of two separate types of machine: Type A, for strategic reconnaissance, and type B, for tactical reconnaissance. The desirable points of the two types had been very clearly expressed by Major Radcliffe in his paper.

He then called upon various gentlemen present at the meeting for their opinions as to whether it might not be possible to combine in one machine the points necessary for both duties.

MR. FLANDERS, who was first called upon, was of opinion that a single type of machine, suitable for both purposes, would be extremely difficult to design and construct, whereas by dis-

tinguishing the types one could easily have light machines capable of 70 m.p.h. or more, while a machine to lift great weight and land in very rough country could also be designed at the present day, but would necessitate a lower speed.

MR. MANNING agreed emphatically with the previous speaker, stating that whereas a machine could be built which would carry one man at 75 to 80 m.p.h. and have a radius of action of 250 miles, such a machine would not be suitable for use in rough country. For this it would be better to have a slower machine, which, with a 100 h.p. engine, would be capable of lifting a passenger and possibly a weapon. Armour he condemned as impracticable.

MR. BARBER agreed with the two previous speakers, and thought a machine to carry two passengers for three or four hours at 50 m.p.h. could be easily built.

MR. HANDLEY PAGE, while agreeing in the main with those who had already spoken, stated that it would be quite possible to build a machine which would achieve both aims, but effecting neither purpose so well as the aeroplane designed for one object only.

MR. T. W. K. CLARKE spoke to the same effect.

On being asked his opinion as to the necessary points of the engines for these machines, MR. MORT said that, from the user's point of view, any engine would do, provided it developed sufficient power. The designer had only to say what power he needed and the engineer would give it.

CAPTAIN WOOD, while admitting that a separate type for each purpose was desirable, instanced the three-seater Nieuport as a machine which, while capable of 73 m.p.h., could yet carry 660 lbs. of useful load and could also land in very difficult country.

MR. BARRINGTON-KENNETT agreed as to the success of the Nieuport, but considered it better, if possible, to have the two types quite distinct. There was no difficulty in getting speed plus load, but in the military view it would be well to have single-seaters with an officer aviator and others with skilled observers. Speaking as a pilot he wanted a machine for all weathers and would sink all other features for this. Also, he wanted communication between pilot and observer, and a box to carry spare parts. MR. DUNNE said that if they wanted speed they could have speed, and if they wanted to lift weight they could lift weight. They were just two ways of using power.

### Is an Observer Needed.

GENERAL HENDERSON, who, as a trained reconnaissance officer and a pilot, may certainly be considered *au fait* with his subject, considered that, in the case of the type A machine, which was intended to bring in general information as to large bodies of troops, the pilot could quite easily act also as observer. He drew an analogy between air and land scouting, and pointed out that although type A should preferably consider discretion the better part of valour, and should retreat on being attacked, there should be another type capable of offence, since there would infallibly be a fight for the command of the air very early in the proceedings; just as cavalry scouts did not fight, but a cavalry brigade fought for its information.

GENERAL RUCK then called on a naval man to speak, and selected LIEUT. SAMSON, one of the Eastchurch flyers, who started by remarking that if you were out for a day with the Belvoir you did not take out your grandmother's carriage horse. He thought that to obtain definite news a pilot by himself on a fast machine was best; but if a tour of the country was necessary then one wanted a pilot solely to drive and an observer to write down all he saw. He had tried, and he did not believe one could write and drive at the same time.

CAPTAIN BURKE, of the Air Battalion, in true Hibernian mood, said that if they were going to have different types he wanted four, but that if they were going to limit him to two types he would rather have one. That is to say, he would take a machine of the Nieuport type, which could do 73 miles an hour with three people on board, and use it for either strategical or tactical reconnaissance. And then he would go and ask the constructor to let him have a fighting machine as well.

THE CHAIRMAN commented on the unanimity of the conclusions arrived at. He then said that, as it seemed agreed that high speed was a necessity for type A, he would be interested to hear what was considered the highest speed attainable, always with the proviso that the radius of action should be large.

### As to Speed.

MR. BARRINGTON-KENNETT imagined that a speed of 80 m.p.h.

was desirable and obtainable, but laid stress on the fact that a pilot for such a machine must be, in the first place, a natural flyer, and must then be very well taught and have much practice.

MR. FLANDERS, more sanguine, stated that with an engine of 100 to 120 h.p., a speed of 100 m.p.h. could be obtained, in which MESSRS. MANNING and BARBER concurred.

MR. HANDLEY PAGE agreed to the possibility of this speed, but foresaw almost prohibitive difficulties in starting and landing.

MR. MERVYN O'GORMAN, of the Balloon Factory, when called upon, said he wanted information. He wanted to reduce all points to numerical values—say ten points for a weapon, four for stability, and so forth. If the values were definitely settled, one type or another would become compulsory.

GENERAL RUCK remarked that he still did not gather which type Mr. O'Gorman favoured, or what speed he considered possible, whereupon Mr. O'Gorman gave a further exposition of his views on the numerical system.

COLONEL CAPPER agreed that two types were needed, but held out for some sort of arm in any case.

Here certain members of the Aeronautical Society obtruded their views on entirely irrelevant matters, and quite unasked, each having, presumably, some axe of his own to grind with the best intentions in the world. The Chairman suffered them kindly, if not gladly, and when the meeting had resumed its former demeanour of serious attention wished to know what was the feeling as to the position of the propeller, and was curious as to the type of machine which would most probably be produced by the conditions of the War Office competition.

#### Conditions of Trials.

CAPTAIN WOOD thought that these conditions would probably evolve a type similar to that successful in the French trials. He remarked that, at the Paris Show, where he had been earlier in the day, the latest machines seemed to separate into three types: the monoplanes, representing type A; the tractor biplanes (or double monoplanes), suited to type B; and thirdly, the front-elevator biplanes—though he did not indicate the use to which he thought the latter best adapted.

MR. DUNNE agreed in Captain Wood's view of the probably successful type of machine, as also did MESSRS. FLANDERS, MANNING and BARBER, all of them, however, touching on the difficulty of combining the necessary weight and solidity with anything higher than the bare minimum of 55 m.p.h. allowed by the conditions.

CAPTAIN LANE said that a wind of 25 m.p.h. meant 15 to 35 m.p.h. at various angles, and up and down, so one needed a reserve of power and stability. The machine which flew oftenest was the most useful in war.

COLONEL CAPPER pointed out that vertical currents, of which

Captain Lane spoke, were mostly local, and a fast machine could go through them without trouble.

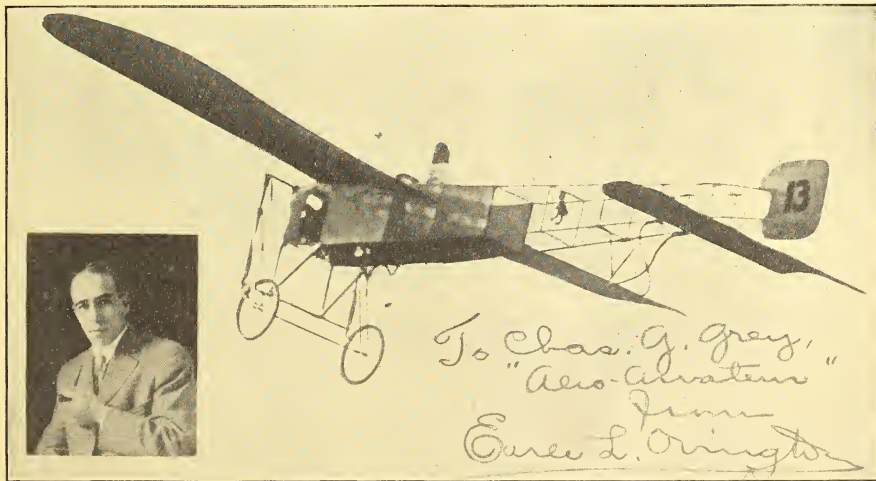
PRINCE LOUIS OF BATTENBERG then rose to propose a vote of thanks to the Chairman. He said that, though a naval man, he was equally interested in the military side. He cited the case of Nelson at Toulon, in 1805, as a naval parallel to Major Radcliffe's examples, and also the action before the Battle of the Nile in July, 1798, when Nelson nearly ran into the whole of Napoleon's Armada, and showed how useful aeroplanes would have been. Finally, he remarked that if the Army wanted a hawk to spy for them, the Navy needed a web-footed hawk, that could come down in and rise from the water.

COLONEL SEELY, in seconding the vote of thanks, said they must all be struck by how little we know of aviation. He thought a meed of praise was due to the bravery of those men who were the pioneers. No one could possibly doubt, in the presence of this new science, that it was bound to revolutionise warfare. In the Russo-Japanese War, to give a modern instance, if one studied the three decisive battles of the war, one was convinced that if one side or the other had had aeroplanes the results would have been absolutely different. To-day any battle between armies even approximately evenly matched could only be won by strategic surprise. With aeroplanes a strategic surprise was impossible. Therefore, battles in the air would be a prelude to any big action, for the command of the air was necessary in order to make strategic surprise possible. Lord St. Aldwyn had said in the House of Lords that, as a nation, we had a tendency to wait. The time had now come when we could wait no longer. The War Office would now join with the Admiralty in a big forward movement, and would see to it that, hand in hand, the Services would make up lost ground.

The whole meeting was highly satisfactory, and Colonel Seely's final words, which may be taken as a definite announcement of the Government's policy, are undoubtedly the greatest encouragement that could possibly be given to those of us who have, during the discouraging period of the past year, done our best to keep alive a spirit of optimism in those who have worked so hard and spent so much money to develop aviation in this country.

Some day Colonel John Seely will be recognised by the world at large as the maker of our aerial defence force. To-day THE AEROPLANE has the honour to place that fact on record, in advance. And with Colonel Seely must be joined Prince Louis of Battenberg as the mainstay of aviation in the Navy.

The Aeronautical Society may well feel proud that two such men should have honoured it by making such important announcements at one of its meetings.



Mr. Earle Ovington on his 70 h.p. Blériot, the first machine of a modern military type to reach America.



## The R. Ae. C. Dinner.

On the whole, the Royal Aero Club dinner at the Royal Automobile Club on Thursday last was an enjoyable affair for most of us. Needless to say, Herr Pruger saw to it that the catering was of the best. Mr. Harold Perrin had cleverly arranged the seating so as to accommodate the maximum of people with the minimum of discomfort—albeit, he had to refuse over 100 applications for tickets after getting 300 people into a space intended for 250. Also, he provided a very fair musical programme, Signor Lenghi being the best of the performers. The speeches, most of them, were commendably brief and to the point, though one or two speakers seemed to be under the impression that they were up for the duration record, and in consequence continued to address their immediate environment amid a buzz of general conversation.

The only really regrettable incident was the postponement of the presentation of the Michelin Prize to Mr. Cody until midnight, an unfortunate error of judgment which gave colour to the idea that it had been done on purpose to prevent Cody's views from being heard by a number of influential political and military men who were present. I do not myself suggest that such was the case, but certainly the idea was prevalent, and it was satisfactory to see how many people remained to an inconvenient hour on purpose to give the man who was, in truth, the hero of the evening something like the ovation he deserved.

After the usual loyal toasts had been duly honoured, Mr. G. J. Sandys, M.P., one of the two leaders of the pro-British aeroplane agitation in the House of Commons, proposed the toast of the "Imperial Forces" in a very effective speech. He referred to the nearness of war during the past few months, and pointed out how we had relied entirely on the supremacy of our navy. Recalling that the Royal Automobile Club building is on the site of the old War Office, he imagined how horrified the late Commander-in-Chief would have been at the alteration, and, having been in the Service himself, he said this with all respect. Turning again to the serious side, he remarked that the French manoeuvres showed the revolution aeroplanes would make in war. The rôle of the cavalry would be changed, for, as scouts, aeroplanes would take their place to a great extent. If we had had aeroplanes twelve years ago many of our disasters in South Africa would have been avoided. To-day the French were supreme in their aeroplane forces, but even they were not satisfied. If war broke out now this country would be without aviators, and our generals would be unaccustomed to utilise air-scouts to advantage. He was by no means satisfied with the War Office proposal to train 100 officers, attach them for a period to the Air Battalion, and then return them to their regiments.

Lieut.-Colonel Oswald Smeaton, replying in a straightforward, soldierly way, said that we could depend on the personnel of our army to supply the men for military aviation if the taxpayer provided the money and material. He felt that in the recent crisis war was averted not only by means of our big fleet, but by the respect felt for the French army aviators. He reminded his hearers that it was Prince Henry of Prussia, a fine officer and a sailor, who had insisted on the policy which had resulted in Germany appropriating a colossal expenditure to aviation.

Mr. Joynton-Hicks, M.P., who proposed the toast of the Royal Aero Club, is, of course, with Mr. Sandys, the leader of the aviation party in the House of Commons. He urged that we should not lag behind other countries. We had already 165 certificated aviators, and were making great progress. He considered that the club had done great work for the good of the country in arranging the deputation of manufacturers to the Under-Secretary for War. He emphasised the necessity for British military machines to be made in this country. This could be done, and he hoped the club would see before long a complete victory for the British manufacturers.

Thereafter, Mr. Ernest Manville, after a graceful speech, presented his prize of £500 to Mr. Howard Pixton, who, being a modest youth, and at all times a man of few words and doughty deeds, returned thanks in a still, small voice, which did not penetrate to my end of the room; albeit, I have known him make himself heard above the roar of a Gnome engine when in his natural element. However, everyone likes Pixton, and signified the same in the usual manner, so it did not matter much after all.

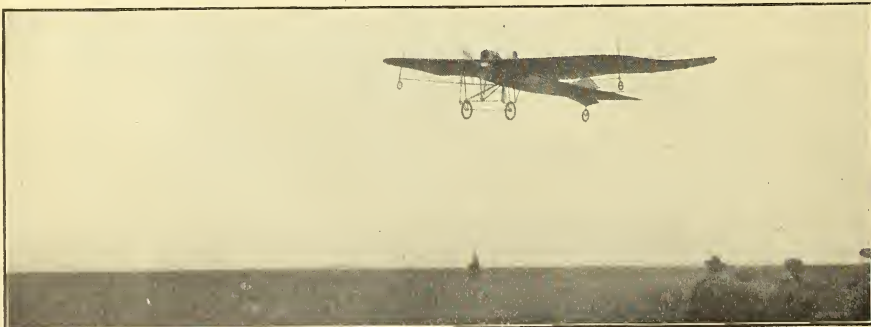
Then Mr. Roger Wallace, the chairman, replied for the club, the President of one of the numerous societies of engineers gave a discourse, Professor Huntington said a few words; there were numerous items of the entertainment, and, finally, Mr. Wolff, of the Michelin Company, was allowed, at midnight, to make a very pleasant speech and to present Mr. Cody with £900 from the Brothers Michelin.

Cody's utterances in reply were, under the circumstances, a model of self-restraint. He merely remarked that owing to the late hour he would omit some of the things he might have said if he had come earlier in the programme—a neat touch that, for the man of the moment to class himself deliberately with the "artists" who were booked for purposes of entertainment. He thanked Mr. Wolff, referred briefly to the fight for the Manville Prize, said how he appreciated the sportsmanlike way Pixton had fought him for it, shook hands publicly with Pixton, regretted that no one had put up a fight with him for the Michelin Prize, told us that when Lieut. Parke smashed the smaller Cody biplane it was not the fault of bad piloting, but merely an accident that he himself or his friend Pixton might have had, warned us all to look out for the next appearance of the Cody machine, and then strode majestically back to his place, reminding one irresistibly of Kipling's *Captive*:—"Thus we had speech by the way, but not touching his sorrow—"

Rather his red Yesterday and his regal To-morrow, Saluting aloofly his Fate, he made swift with his story; And the words of his mouth were as slaves, spreading carpets of glory.

Till he returned me to earth, and the vision departed; But on him be the Peace and the Blessing: for he was great-hearted!"

After Cody nothing else was of interest, so we dispersed, with somewhat mingled feelings. Still, Mr. Perrin certainly did his best, and, unfortunately, he cannot flag a speaker down as one flags a pilot who insists on doing too many figures of eight in his certificate tests. That seems rather a matter to which the chairman might attend on these occasions.



The Erich Monoplane in the air. This is a type differing from that which took part in the Circuit of Britain, in size, power, and chassis arrangement. It was on a machine of this kind that Lieut. Gavotti has been bombing in Tripoli.

## The Week's Work.

## Monday, December 11th.

**BROOKLANDS.**—Bad day. In afternoon Fleming took advantage of short hull and gave short tuition flights to Captain Weeding, Captain Raleigh, Lieut. Longcroft, Garne, Lane, and Warren on Bristol. Walton-Edwards Colossoplane also out testing. Nothing else doing.

**HENDON.**—Brière, doing rolling practice, started to turn too shortly, and managed to break propeller, besides some slight damage to other parts of Blériot.

**THE PLAIN [THE ARMY].**—Mr. Barrington-Kennett snatched twenty minutes' flight on his Nieuport just before dusk, landing within 50 yards of the sheds, but on wrong side of fence which marks boundary between Government and private lands. (More compensation?)

## Tuesday, December 12th.

**BROOKLANDS.**—Raynham on Avro-Viale across country to Chertsey and back, at 800 feet. Sippe started for brevet on same machine, but engine failed him, and when put right, too late to go on. Colossoplane out early. Fleming on Bristol out in morning with Captain Weeding, Captain Raleigh, Lieut. Longcroft, Lane, Warren, and Garne, each taking charge. In afternoon Fleming up with Meshan, new pupil, and later with Captain Weeding. Captain Raleigh doing hops alone. Garne made an eight in good style. Lieut. Longcroft doing straights. Fleming then up with all pupils, making altogether thirty trips during day. Blondeau out on old biplane. Sabelli on Deperdussin racer, and Gill on taxi, out, with Chattaway, now full-fledged pilot, as honorary instructor.

**HENDON.**—Weather good except for some fog. At 9 a.m. Ridley-Prentice brought out school Valkyrie. 35 h.p. Green pulling magnificently, and lifted 12 st. pilot as quickly as 50 h.p. Gnome. Fog made anything over 100 feet impossible, and after few circuits he descended so that Chambers could use machine for brevet tests. Captain E. B. Loraine and Mr. Slack acted as official observers. Chambers flew exceedingly well under very trying conditions, Green engine frequently lifting him out of sight in fog, necessitating constant *vois planés*. Landings very good, and altogether he handled machine in most capable style. In afternoon, Busk, on school Valkyrie, for good flights. Then Captain Loraine brought out passenger carrier, and took up Lieut. Hawker, a Valkyrie pupil, for short flights. Later, Barber put up fine demonstration flight of twenty minutes on Valkyrie racer, including numerous spiral *vois planés* and sharp turns with beautiful banking. Busk then got further practice, and showed improvement. At same time Barber took up Hawker for short flights, but fog thickening, no great height could be attempted. Captain Loraine made concluding flight of the day on racer, for many circuits.

Fowler, Gates, and Raphaite all out, two former doing straight flights, and Raphaite practising rolling. Fowler showing distinct improvement, making very steady flights and well judged landings, with engine stopped. New pupil, C. H. Biard, joined school, and is having preliminary tuition in Grahame-White workshops.

**EASTCHURCH.**—Captain Gerrard, with Lieut. Gregory as passenger, made long flight on Short Triple-Twin, passing over Sheerness Harbour, where they were able to recognise number of warships at anchor there. Throughout the trip Captain Gerrard kept the machine at an even altitude of 900 feet, without any appreciable variation, height being checked by two aneroids. Lieut. Gregory had first experience of piloting Short twin biplane, making fine flight and coming down full of praise for new machine.

**THE PLAIN.**—Jullerott started day's work by taking up Lieut.

Ashton, afterwards taking Lieut. Brodigan. Pizey took Bendall, and afterwards did first solo on single-seater monoplane, performing two circuits, and landing remarkably well. In afternoon, Jullerott made trial solo, then took Lieut. Ashton. Pizey took Bendall, and Hotchkiss took up Sutton. Pizey and Jullerott each did second flight on single-seater monoplane.

**[THE ARMY].**—Mr. Barrington-Kennett out on Nieuport for 20 minutes in morning. Captain Fulton in afternoon took out F. 8, testing atmospheric conditions, prior to landing over to Lieut. Fox for practice flights.

## Wednesday, December 13th.

**BROOKLANDS.**—Bell supplied comic relief on Mr. Jack Humphrey's gigantic monoplane. This apparently gets off ground at about 10 m.p.h., and refuses to bring nose down. Guaranteed to win any prize for slowest lap. Bell descended from altitude of 100 feet by switching off, and put Hunter up to get weight in front. No appreciable effect, so put Garne up as well. Still no effect, machine flying at considerable altitude, say, 20 feet or so, with tail endeavouring to touch ground. Altogether quaint performance, much appreciated by Brooklands aborigines, now so accustomed to machines which fly. Only usual part of affair was Green engine, which seems able to pull almost anything skyward.

Spencer out with three lady passengers in turn; evidently cultivating extensive feminine *clientèle*. Raynham out on Avro-Viale, doing well. Fleming up with Warren and other pupils. Bell wound up day on Martin-Handasyde in fine style. Let machine climb without forcing, and got up to 3,000 feet in about 17 or 18 minutes. Machine quite remarkably good flyer.

**THE PLAIN.**—Jullerott made trial, afterwards taking Lieut. Brodigan. Busted took Bendall, and then made solo on single-seater monoplane, followed by Pizey on same machine, he having meanwhile taken Lieut. Ashton. Jullerott took Lieut. Brodigan, then Bendall. Busted took Lieut. Ashton, and Pizey took Lieut. Brodigan and Bendall. Lieut. Porter made three-quarters of an hour's solo flight at 1,000 feet. He is now quite ready for his ticket.

## Thursday, December 14th.

**BROOKLANDS.**—Raynham out on old Avro with 35 h.p. Green, recently overhauled, but new propeller a misfit, so brought in for alteration. Then out on Avro-Viale in wind.

In morning Fleming up on Bristol, with Captain Weeding and Garne. Garne then did first half of brevet tests, flying splendidly and landing from 100 feet with engine stopped. Fleming up with pupils. Captain Raleigh doing straights alone; Captain Weeding and Lieut. Longcroft also doing solo straights. Spencer out with two feminine passengers. Sabelli and Gill on Deperdussin taxi.

**HENDON.**—Sacchi, making too sharp right turn on Blériot, fell rather heavily on side, and broke both wings, propeller, and minor parts. Machines will be in commission again in the course of a few days.

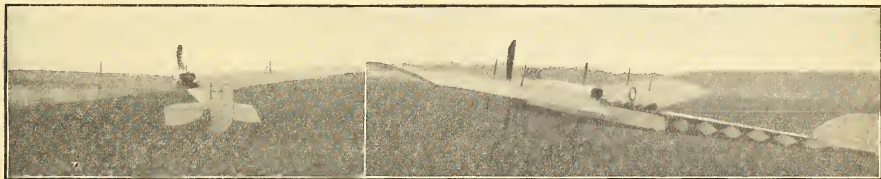
At 10.15 a.m. Captain Loraine flying well on Valkyrie racer for several circuits in very gusty wind. He handled machine extremely well, and, after 15 minutes, descended with fine *vois planés*.

**THE PLAIN [THE ARMY].**—Lieut. Barrington-Kennett and Lieut. Manisty on F. 8. Afterwards Lieut. Barrington-Kennett off for long circular flight at good height, with Lieut. Manisty as passenger.

## Friday, December 15th.

**BROOKLANDS.**—Wind and rain. Nothing doing.

**HENDON.**—Morris, doing straight flight, landed on edge of the ground, broke both wings and did some other damage to chassis of Blériot.



The new Martin-Handasyde Monoplane, with Antoinette engine, at Brooklands, one of the finest passenger-carriers in the world.



## Saturday, December 16th.

**BROOKLANDS.**—Martin-Handasyde out, with Bell at wheel, for six circuits, flying in usual fine style. Raynham testing 35 h.p. Avro-Green, then Young took over and "landed" in flood at end of ground, but managed to get out of three feet of water.

Fleming out for test on Bristol, and then Garne did second part of brevet tests in excellent style, but did not go high enough, also turned short of observers, making capital right-hand turns, and forgetting that group of observers represented half-kilometre mark-posts which ought to be circumnavigated. Fleming then tested machine for climbing power, and got up to 600 feet in half circuit. Captain Weeding doing straights, as also Captain Raleigh and Lieut. Longcroft.

Sabelli and Gill both out on Deperdussin in morning, former improving rapidly, and latter, new pupil, rolling. Graham Wood doing circuits early on Blondeau biplane. Colossoplane out in morning, but came down with engine misfiring; in afternoon out again, doing better.

Percival out for first time on his new biplane, fitted with E.N.V. engine off old Billing biplane. Machine promptly named *Parseval I*. Seems likely to be good flyer, is well built, and seems strong and sound.

Fleming up for short while on Bristol, but wind too bad for box-kites. Bristol monoplane promised before long, and will add immensely to prestige of school, already busiest at Brooklands.

Gilmour finished day's work by magnificent flight on Martin-Handasyde in rising wind blowing in nasty puffs. Performance not so sensational as usual, as people becoming accustomed to Gilmour's methods, and now realising that machine handles quickly.

**EASTCHURCH.**—An excellent day and no time wasted. Travers out early on 70 h.p. Short, making very pretty flight. Afterwards he made several tuition flights with Cutler, and D. W. Barton, of Territorial Balloon Section, both of whom took charge of machine several times through dual control. In afternoon, Ogilvie out on N.E.C.-engine Wright biplane, flying with skill and precision, at times skimming whole length of aerodrome within two feet of the ground. Other pilots flying during afternoon were Lieut. Samson and Lieut. Longmore, who put in some fine flights on Birdling monoplane, which has shown considerable improvement in speed since being fitted with new propeller, and Captain Gerrard and Lieut. Gregory, who were piloting both single and twin-engine Short biplanes.

**BRIGHTON-SHOREHAM.**—De Villers, of Chanter school, put in good rolling practice.

**THE PLAIN.**—Jullerott took Lieut. Brodigan for half an hour. Busted, Pizey, and Lieut. Reynolds, R.B., each made circuit on one of school monoplanes. Bendall made first circuit solus in good style, and Lieut. Head, R.N., also made two solos. Lieut. Ashton also entered solo-flying stage, acquitting himself very well. Lieut. Porter flew another two solos, thus making fifth pupil in solo stage. Busted and Jullerott each flew alone, and Pizey finished day's work by taking Lieut. Brodigan.

**[THE ARMY].**—Lieut. Manisty making fine flights on F. 8 in very gusty wind. This officer, who took his brevet on a Hanriot, handles a Bristol biplane remarkably well considering he has only had a week on it.

## Sunday, December 17th.

**BRIGHTON-SHOREHAM.**—American lady, Miss Preston, has signed on as pupil, and Mr. Mellersh, former Bristol pilot, is joining Chanter school. Collyer-England biplane has engine in again, and will be out first fine day. Two-seater Deperdussin that was here has, it is understood, been sold, and one of British-built machines is expected to take her place.

EVERYWHERE.—Wind and rain.

## Army Aeroplanes on Salisbury Plain.

The Aeroplane Company of the Air Battalion is now back on Salisbury Plain, much to its satisfaction, and some good work has been done. The first day's flying was done on December 4th, the first machine out being the Bréguet, officially known as B. 3. Lieut. Hynes, the pilot of this machine, did some short flights, and was soon followed by Lieut. Reynolds on F. 5—one of the old Bristol box-kites. After short trials Mr. Reynolds took up Lieut. Fox, R.F.E., ex-dirigiblist, who is now learning to fly. Later Captain Fulton brought out another box-kite, and finished the tests for his superior brevet.

Lieut. Barrington-Kennett made his reappearance on the 7th with his old mount F. 8, another box-kite, and gave more lessons to Mr. Fox.



Mr. C. F. Montagu-Chambers, the clever young pilot of the Valkyrie.

On the 6th, a busy day, a strange apparition hove in sight, which turned out to be Mr. de Havilland, of the Balloon Factory, on his own-made box-kite, now modern-Farmanised by abolishing the elevator and sticking the pilot out in front to act as a shock-absorber. One hopes that if this machine does not kill its pilot first, as the Balloon Factory's last effort did, that in a year or so the designers will see the wisdom of letting the engine take the bumps.

However, Mr. de Havilland was on his way to Pewsey, in quest of his superior brevet, and returned to the Air Company's camp for lunch on the way back. He is quite a good flyer, and worthy of a really modern machine.

During the day Mr. Barrington-Kennett did a fine forty-minute flight on the Nieuport, now known as B. 4 (possibly because being the fastest machine in the army it is always in front). Mr. Hynes also did well, taking the Bréguet up to 1,500 feet. Lieut. Conner, who has taken over the fine old Blériot two-seater, formerly belonging to the late Lieut. Cammell, made his first attempt on it, and did some excellent straight flights, but, unfortunately, wound up in a ditch, damaging the chassis. After this he did some more flying on a box-kite. Mr. Reynolds, as full of pluck as ever, started for Oxford on another box-kite, going for his superior brevet, got there, and within twelve miles of home, when he ran into a storm and had to come down at Ramsbury, and wait till next day. Captain Fulton also put in some fine flying with and without passengers on F. 4.

On the 7th Mr. Fox started doing straight flights alone, and showed splendid progress, making perfect landings. He evidently has the makings of a good pilot, when he has time to finish his training, but he had to go back to duty with the Gas Company last week.

## Grahame-White and the Wright Brothers.

In the suit brought by the Wright Brothers against Mr. C. Grahame-White for alleged infringement of patents the judge refused to give a ruling on the validity of the Wright patents, but granted an injunction forbidding Mr. Grahame-White to make further flights without the permission of the Wright Brothers.

## Valentine over Paris.

Mr. James Valentine, in a Bristol two-seater monoplane, left Issy on Thursday and flew round the Eiffel Tower. He crossed the Seine, passing over the Place de la Concorde, and went over the Rue de Rivoli to Notre Dame, which he encircled. He continued his flight to Vincennes, and, keeping at a good height, flew back to Issy, where he landed. This is the first time a British aeroplane has flown over Paris with a British pilot on board. Versupey, a Belgian, has, of course, flown his Bristol biplane over Paris, and Mr. Oscar Morison has flown his Blériot and his Morane over Paris, and Mr. Valentine has, it is believed, flown his Deperdussin over parts of Paris. Further, Mr. E. T. Willows, on his little dirigible, has spent a good many hours on each side of the Seine.

## Train up a Child.

By D. M. HAWARD.

Mary and I were having an argument; at least, arguing being chiefly a female virtue, Mary was doing most of it, while I merely put in a word now and then by way of keeping things going.

The important subject under discussion was the choice of a Christmas present for Peter Brown, junr., son and heir.

"But, Mary," I expostulated, "I don't see any difficulty in the matter at all."

"No, you wouldn't," retorted Mary, scornfully.

"Well, I mean I should simply buy him a model aeroplane, and have done with it."

"That's the worst of marrying an aviator; your mind is utterly incapable of thinking about anything but flying machines."

Here I broke into the argument for a minute or two in order to show Mary what an entirely fallacious statement this was, since, if it had been true, I shouldn't have thought of marrying her. But Mary refused to be convinced.

"That's you all over, Peter, you can never keep to the point in an argument."

"Well, I should——"

"Well, I shouldn't——" And so on *ad lib.*, till I suggested she should put her hat on and we would go forth together to make the important choice.

Mary came downstairs fifteen minutes later, having made herself look perfectly adorable on purpose. She always does when she is annoyed with me, because she knows it will make me thirst to make it up with her, when she will have the pure joy of refusing to do anything of the sort. We walked along the road for some distance in silence.

"Did you know Jones was going to be married?" I said, by way of making conversation.

"Do you mean Jones who flies the Farman?"

"Yes."

Mary sniffed. "I am sorry for his wife."

"Why? Jones is a jolly good sort, he——"

"And an aviator," supplemented Mary, scathingly. After which I deemed it more diplomatic to keep silent.

We drew up outside a magnificent emporium, where a seething mob fought wildly to get inside, in a way that made me think regretfully what a pity it was aviation meetings couldn't be run on the same lines. We had to pay to get in when we did eventually reach the doors.

"You see," explained Mary, "you get the money back when you buy something."

"And if you don't?" I queried.

"Oh, but we are sure to find something," said Mary.

## What to See at the Paris Show.

The "Third International Exhibition of Aerial Locomotion," which opened on Saturday last, can actually claim (more or less) to have justified its title, for there are no less than four exhibits from other countries, viz., the Bristol, the German Albatross and Aviatik, and the Japanese Kiyotake Shigeno. Apart from these, the exhibits are all those of French firms, and they are a magnificently representative set of stands.

It is significant that the majority of the machines exhibited show distinct leanings toward the military type, being heavier, stronger, and more powerful than in the previous exhibitions. The Breguets shown, for instance, comprise two historic machines—the 140 h.p. machines flown by Moineau in the military trials, and that used by Brégué in Morocco.

The Morane-Saulnier firm are showing a 70-h.p. military, and also an unfinished machine with a large, torpedo-shaped body, circular in cross-section. This body has a ventilated hemispherical nose, enclosing the motor, and is about 5 feet in diameter at its greatest, tapering to a point at the tail. The whole is of steel, and bullet-proof, and has a bomb-tube.

Summer also is showing a military monoplane, also a steel biplane which is said to climb at 300 feet per minute and to have been flown in a 40-mile wind. Both these machines are painted leaf-green to make them invisible when near or on the ground. Nieupert, R.E.P., Deperdussin, Savary, Bristol, Farman, and others are showing military machines.

The second line of progress, that of reducing weight, dimensions, and horse-power to a minimum, has been followed by comparatively few. The outstanding example, of course, is Nieupert, who could design a three-seater with 100 h.p. instead of 140, a racer with 50 h.p. instead of 70, and a 28 h.p. machine which is faster than most with 50 h.p. The aeroplane is exactly as it was; the motor, however, has been modified in various respects. The 35 h.p. Anzani-Deperdussin is the second noteworthy low-power machine.

"And if we really don't," I said, with my mind still running on aviation meetings, "I shall make an awful fuss till we do get our money back." But Mary had vanished in the crowd. I found her some few minutes later busily engaged in making a perspiring young man wind up all the mechanical toys within reach.

"If you really mean to give Boy the ridiculous thing you were talking about, how would this do?" said Mary.

She held up a particularly horrible reproduction of a diseased dirigible with "Made in Germany" stamped on the propeller.

"My dear Mary, as an aviator's wife you ought to know better than to expect me to be wishful to pervert the morals of the younger generation, as represented in Peter. A dirigible, of all horrors!"

"Oh, well, it's a flying machine," said she, aggravatingly.

A few moments later I lost Mary again, and, left to my own devices, found the very thing I was looking for, and purchased it in the joy of the moment.

I was just getting my change when Mary came along, and eyed my capture.

"Since you seem to have made up your mind," she said, icily, "we may as well be getting home, I suppose; unless you want to buy any more" (with emphasis).

I thought of a splendid argument while we were hewing our way out, and started it immediately we got outside.

"You know," I said, "H. G. Wells says we ought to give children toys that are educative, and not merely amusing; we ought, in fact, to train up a child in the way it should go. Hence the crying need for us to buy aeroplanes for Peter, in order to astute his mind to the importance of wing camber and aspect ratio; then, when he reaches years of discretion he won't go wasting his time on horses and steam yachts and things like——"

"If you're so absent-minded," said Mary, "you'll get killed one of these days when you're flying; that's the third bus you have let go past without stopping it."

I woke early on Christmas morning, owing to Peter, junr., making an exuberant matutinal raid on his stocking. He was commenting audibly on the miscellaneous contents, as he fished them out of the bed.

"Here's a silly baby aeroplane," I heard him say. "I specks Faver Kismus never knowed we dot a weal one." And he cast it disdainfully upon the floor forthwith.

I saw Mary's mouth taking on an "I-told-you-so" curve, so I turned over and went to sleep again.

The firm call it a "school monoplane," in spite of the fact that it is, as is by now well known, capable of flying high and far. The 35 h.p. Blériot is another example.

There have certainly been great strides made on the designer-constructor's part since Olympia. Machines especially worthy of close inspection, besides the above-mentioned, are the Zodiac and Astra tractor biplanes (Avro type), both of which are provided with central skid chassis; the Paulhan Torpedo, which disputes with the Morane-Saulnier and the Nieupert the claim to be the fastest thing on wings; the Blériot front-elevator five-seater, with limousine body and extruded chauffeur-pilot; the new Blériot chassis on the military 70 h.p. two-seater, and the variable-pitch propeller on the same machine.

Engines have increased in number without apparently any tendency to fixity of type or design. The 100-h.p. Chenu is a six-cylinder vertical, with cylinders cast in pairs, and has done some very good test runs. There is a new 60 h.p. Panhard of the same type, but with separate cylinders. Renaults have introduced a 35 h.p. engine, which is simply a smaller edition of their well-known 70 h.p. Among radial engines, a seven-cylinder radial R.E.P. of 90 h.p. is worthy of much attention; we shall probably hear of this anon. There is a sixteen-cylinder 130 h.p. engine with a four-throw crankshaft, which will be good if it works at all—it is called the "Burlat." There is a nine-cylinder, 110-h.p., water-cooled radial, Canton-Unné—apparently these obliging manufacturers are prepared to turn out a motor of any desired power by the simple process of taking as many cylinders as necessary (at 12 h.p. per cylinder) and sticking them at regular intervals round the equator of a crank-case. I know of a seven-cylinder 75 h.p., a nine-cylinder 110 h.p., a ten-cylinder 120 h.p., and there are probably others.

The rotary motors comprise the Gnome, and various freak motors embodying splendid ideas which may or may not work in practice.



## The Danger of Diving.

In a recent article in this paper I pointed out at some length just why and how it is that a *vol piqué*, or dive, is safer than a *vol plané*, or glide at the least possible angle. Owing to the recent accident at Filey, which was caused, without doubt, by an extra steep *vol piqué*, the subject has again acquired a deep interest, and I wish, therefore, to point out why it is that excessively steep *vol piqués* are dangerous.

The question divides itself into two parts. Firstly, the excessive strain on the machine produced by the extra high speed attained while diving, and, secondly, the strain on the wings produced when flattening out at the end of the dive.

I have seen various attempts to calculate these strains, but it is curious to note how far from correct they are. In one instance, for example, the speed of the dive was calculated on the supposition that the machine accelerated as does a weight dropping freely under the influence of gravity, the calculator simply remarking that the extra head resistance due to the high speed would make the final velocity "probably slightly less than this."

As a matter of fact, a machine diving vertically would quite soon attain a maximum speed, at which the head resistance would be equal to the weight of the machine, so that it does not accelerate further.

The same writer attempted to calculate the strain on the wings caused by flattening out by assuming that the machine was instantly turned through a right angle, so that the wings were suddenly presented broadside on to the air at that speed. This, of course, must appear as obviously false reasoning to anyone who has ever flown a machine, and who knows that no machine will instantaneously answer its controls.

One point to be noted is that during a dive of this kind it is almost, or quite, immaterial whether the engine be kept running or not. This sounds startling, but it is really quite simple. If we take, for example, a 60-mile-an-hour machine, this will, in a steep dive, probably attain a speed of over 120 m.p.h.

Now if the engine when running at full power in normal flight runs at 1,000 r.p.m., we must remember that, in order to do any work on the machine it must run at over 2,000 when the machine is diving. It will, of course, speed up considerably, since it is being run with an open throttle, and the propeller, owing to the increase in the machine's speed, is doing no work; but it is distinctly improbable that it will run up to twice its normal speed, and, if it does so, it will certainly do no work at so high a rate of revolution.

Since I have objected to the methods adopted by others in making the calculation, it may be as well to give my own.

### How to Find the Strains.

First of all, it is necessary to find the final speed of the machine during the dive. This is done by finding the head-resistance of the machine at its normal speed, and then finding at what speed the head resistance is balanced by the increased thrust due to the dive. In doing this, it must be remembered that the "lifting thrust" will be diminished as the speed rises. We have, then—

1. Find the total thrust in normal flight,  $T$ , from

$$T = \frac{375 \times H}{v}$$

where  $H$  = the engine h.p. and  $v$  = the normal flying speed in m.p.h., 375 being the mile-pounds per hour in 1 h.p.

2. Find the angle of incidence in normal flight,  $a$ , from

$$a = \frac{W}{K A v^2}$$

where  $W$  = weight of machine in pounds,  $K$  = constant, say  $\frac{1}{150}$ .

3. Find the "lifting thrust,"  $t$ , from

$$t = a W.$$

4. Then the head-resistance at normal flying speed,  $r$ , is obtained from  $r = T - t$ .

5. Find the total thrust at the given angle of dive,  $w$ , from

$$w = W \sin b$$

where  $b$  is the angle between the horizontal and the line of flight during the dive.

6. If  $V$  is the final speed attained, and we assume the ratio of the final speed to the normal speed to be  $k$ , so that  $\frac{V}{v} =$

then

$$k^2 = \frac{w + \sqrt{w^2 - 4 t r}}{2 r}$$

and  $V = k v$ .

[I append the method of arriving at this formula, in case any mathematically-inclined readers care to follow it:—

Let  $w$  = total thrust at speed  $V$ .

$T$  = total thrust at speed  $v$ .

$t$  and  $t_1$  = lifting thrust at  $v$  and at  $V$  m.p.h.

$r$  and  $r_1$  = head-resistance at  $v$  and  $V$  m.p.h.

$a$  and  $a_1$  = angle of incidence at  $v$  and  $N$  m.p.h.

$$k = \frac{V}{v}$$

$$(a) \text{ Now } \frac{r_1}{r} = \frac{V^2}{v^2} = k^2 : \therefore r_1 = k^2 r$$

$$(b) \text{ and total weight } W = K A a v^2 = K A a_1 V^2$$

$$\therefore \frac{a_1}{a} = \frac{v^2}{V^2} = \frac{1}{k^2} \text{ and } a_1 = \frac{a}{k^2}$$

$$(c) \text{ and since } t_1 = a_1 W = \frac{a W}{k^2}$$

$$\text{and } t = a W$$

$$\therefore t_1 = \frac{t}{k^2}$$

$$(d) \text{ Now } w = r_1 + t_1 = k^2 r + \frac{t}{k^2} \text{ or } r k^4 - w k^2 + t = 0$$

solving for  $k^2$ ,  $k^2 = \frac{w + \sqrt{w^2 - 4 t r}}{2 r}$ , and it will be found that the positive sign must be taken.]

Having in this way found the final velocity, we can arrive at the force on the wings from the following consideration: The machine is moving in a straight line during the dive. At a certain moment the pilot decides to "flatten out," and in order to do this he uses the controls, thus causing the machine to move in a curved path. It is the centrifugal force produced by this curved path that causes the heavy strain on the wings.

7. This force,  $F$ , is found from

$$F = \frac{4 W V b}{5,000 s}$$

where  $b$  is the angle of dive, in degrees, and  $s$  is the time, in seconds, taken to "flatten out."

[As in the case of formula No. 6, I show how this is obtained. The standard formula for centrifugal force is—

$$F = \frac{W}{g} \times \frac{V^2}{R}$$

where  $R$  is the radius of the curved path.

(a) Now in any arc of a circle,  $l = R b$ , where  $l$  is the length of path; or  $R = \frac{l}{b}$ , or, substituting velocity for space and

angular velocity for angle,  $R = \frac{V^2}{m}$ , where  $m$  is angular velocity in radians per sec.

(b) We know that the machine turns through  $b$  radians in  $s$  sec,  $\therefore m = \frac{b}{s}$ .

$$\therefore R = \frac{V s}{b}$$

$$\therefore F = \frac{W}{g} \times \frac{V b}{\frac{V s}{b}}$$

If now we take  $b$  in degrees,  $V$  in m.p.h., and  $G = 32.2$ , we find, approximately,—

$$F = \frac{4 W V b}{5,000 s}$$

8. Adding this force to the normal load on the wings, we have, for the total load,  $L$ ,

$$L = F + W.$$

### A Practical Example.

It is instructive to apply the preceding reasoning to a concrete instance, so I append the result of calculations founded on the latest reports of the accident at Filey:—

1. The h.p. was 70 and the speed 65 m.p.h.:

$$\therefore T = \frac{375 \times 70}{65} = 404 \text{ lbs.}$$

2. The weight of machine was 1,300 lbs., and surface 360 sq. ft.

$$\therefore a = \frac{1,300 \times 150}{360 \times 65 \times 65} = .128$$

$$3. \therefore t = .128 \times 1,300 = 166 \text{ lbs.}$$

$$4. \therefore r = 404 - 166 = 238 \text{ lbs.}$$

5. The angle of glide was 4 in 1, or 76 deg.

$$\therefore w = 1,300 \sin 76 \text{ deg.} = 1,260 \text{ lbs.}$$

$$6. \therefore R = \frac{1,260 + \sqrt{(1,260)^2 - 4 \times 166 \times 238}}{2 \times 238} = 5,185$$

$$\therefore k = 2,277$$

$$\therefore V = 65 \times 2,277 = 148 \text{ m.p.h.}$$

7. The flattening was very quick; it would probably, had the wings not broken, have taken about 1 sec.

$$\therefore F = \frac{4 \times 1,300 \times 148 \times 76}{5,000 \times 1} = 11,700 \text{ lbs.}$$

$$8. \therefore L = 11,700 \times 1,300 = 13,000 \text{ lbs.,}$$

or a load of just ten times the full flying weight.

No wings, of course, could be expected to stand up to such a strain. Personally, I should say that no pilot on any ordinary machine of to-day ought to risk putting on the strain of anything over three times the normal load for which the machine is intended.—P.K.T.

### The Deputation and its Critics.

Mr. C. C. Turner, writing in the *Observer* on Sunday last, puts the matter of the deputation to Colonel Seely thus:—"Certain mis-statements as to fact are in circulation with regard to the deputation to Colonel Seely, and it is desirable briefly to correct them. It is objected that the members of the deputation were manufacturers and pressmen. As to the former, it never professed to be other than a deputation of manufacturers and others interested; and as to the pressmen, there were four only, and each one of them was chosen for reasons other than his connection with journalism. There was, be it said, nothing of a confidential character in the interview with Colonel Seely, which was reported in the usual way by a news agency. Moreover, if it were necessary to justify the inclusion of journalists in a deputation to a Minister by citing precedents, it would be easy to find several. It is said that Messrs. Short Brothers were not represented; as a matter of fact, a member of that fraternity was on the committee and assisted in the drawing up of the programme, so that only one big firm, the British and Colonial Aeroplane Company, kept aloof. There are other little mistakes, and, for the rest, criticism carefully avoids reference to the main object of the deputation, which was to urge the desirability of placing a few conditional orders with British makers. The internationality of the chief prize was understood and accepted before the deputation saw Colonel Seely. As to the need for placing such orders, it was fairly evident from the statement made by Colonel Seely in the House last Tuesday, when he admitted that only three officers of the Air Battalion and two officers attached are at present engaged in training on Salisbury Plain; so that it is fairly clear that scarcely any progress is being made towards putting 'the fourth arm' into a state of efficiency, even with the personnel at present available. The machines and the men are in this country; the least the authorities might do would be to bring them together."

### A Note from America.

Mr. Earle L. Ovington, of Newton Highlands, Mass., U.S.A., one of the best American monoplane flyers, writes:—"When I had the pleasure of meeting you and having a short talk on aviation, when I was president of the Federation of American Motor-cyclists, little did I know that I should so soon be a 'birdman.' I learned at Blériot's school at Pau, and brought back to America last April the first 70 h.p. Blériot-Gnome."

"I've had a most satisfactory season and a very lucky one, for I have made over one hundred flights in my 'Dragon-fly No. 13,' and never broke a stick in it. I am naturally proud of this record, as I believe it unique. The next time anyone tells you No. 13 is unlucky just cite the above."

"I've given up exhibition flying, and this winter will devote my time to the design of a machine I will make next season, and, incidentally, scribble off a few articles on aviation. I am firmly convinced of the practical future of the heavier-than-air flyer, and expect to be closely associated with its development from now on. And as the first move is to keep myself thoroughly informed as to the progress of the art, I enclose money order for a year to THE AEROPLANE. Wishing THE AEROPLANE and its editor continued success, very truly yours,—EARLE L. OVINGTON."

### From India.

Mr. W. H. Dolphin, who will be remembered as a very good flyer on the Hanriot at Brooklands, writes from Bombay

that there is nothing much doing in India in the way of aviation at present, and that he himself has been so busy over the Durbar that he has had no time to devote to the subject. The only attempt at flying lately has been made by a man in Calcutta, who has an improved Blériot with a three-cylinder Anzani. Mr. Dolphin himself intends to get out a two-seater Derolpussin somewhere in the near future to start the ball rolling, but he is of the opinion that there is not much hope of making money out of flying there, for the Government are against it, and the people are mostly too tired to take any interest in it.

### Herbert Spencer's Plans.

Mr. Herbert Spencer, who has had the intention of going to Canada early next year, will probably stay in this country in order to get a machine or two through for the military trials in the summer. He rather favours the idea of a small fast biplane of the engine in front type. Should he not go to Canada he will, nevertheless, send some machines over in charge of Mr. Hitchcock.

### Bristol Successes.

During November, weather being exceptionally unfavourable for flying, only fifteen pupils in the whole of England passed for the Royal Aero Club certificate. Of this number, ten were pupils of the Bristol schools. Of the ten, seven were officers of the Imperial Forces. It will also be recalled that two of the first three pilots to win the "special certificate" used Bristols, one of them, Capt. Fulton, being the first member of the Air Battalion to qualify. It is evident that the systematic organisation of the Bristol Company, both in tuition and in construction, is producing good results.

### At the Portholme.

Mr. J. R. Duigan, writing from Huntingdon, says that he is extremely pleased with his new Avro biplane, but had weather and tuning up his engine have delayed any real flying up to the present.

It will be remembered that Mr. Duigan is a tenant of Radley and Moorhouse, who are running the Portholme Aerodrome. It is, therefore, pleasing to hear from him, in a purely personal letter, that "if anyone wants a good ground and fair treatment they cannot do better than come here."

Captain Sanders, of Beccles, who has recently been visiting Huntingdon, has been assisting Mr. Duigan with his machine.

### An Avro Move.

In the past the Avro Flying School at Weybridge has been run as a side line to the testing and experimenting of the Avro biplane, etc., but now that these machines are admitted to be one of the most successful types, it is announced that Messrs. A. V. Roe and Co. are transferring the flying school to a separate limited company from January 1st. In this way A. V. Roe and Co. will be able to devote their attention solely to the making of aeroplanes. At the same time, the Avro flying school will be opening out on a larger scale, and, as they have been so successful in the past in turning out some of the best pilots in this country, one may fairly expect to see some very useful work in the near future.

The firm have now got out their scale of charges for the "Superior Brevé." The aviator pays £50, and takes all responsibility. If he passes the three tests in one day, £40 is returned; if in two days, £30 is returned; if in three days, £20; if in four days, £10; and if in five days, he gets nothing back. If he wants to try again, he pays another £50.

### The Death of Lieutenant Lantheaume.

On Wednesday of last week Lieut. Lantheaume, one of the crack flyers of the French army, was killed under particularly tragic circumstances. In company with two brother officers he was flying from Melun to join a picnic party given by his brother-in-law, and when quite close to his destination his machine came down, apparently out of control. The machine was a Blériot of the latest type, and somehow landed completely upside down, with a slight list to one side. The photographs of the wreck show that the fuselage behind the seat is lying undamaged, with the tail-skin uppermost, and in some extraordinary way the wheels lying underneath the wreck, slightly to one side, and absolutely undamaged. This seems to show that the machine hit the ground corner-wise, that is to say, on one wing and the nose of the fuselage, and then turned over sideways. Such a landing could only be due to one of three causes, unconsciousness of the pilot, a defective control, or an actual collapse of the wing, and it is to be hoped an official explanation will be given, so far as anything can be proved. The unfortunate officer's wife was awaiting him, with the party, and saw the whole accident.



## Correspondence.

*The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.*

## Res Non Verba.

Sir,—I see that in the December issue of *Aeronautics* I am credited with speaking at a lecture delivered at the Royal United Service Institute on November 15th. I was not present at that lecture; and the views which I am made to express are diametrically opposed to those I hold. I therefore venture to ask you for this opportunity of disclaiming them, and also the fact that I delivered an oration at all! The practical business of flying leaves me no time to get up lecture subjects, even were I able or inclined to do so.

Bulford. J. D. B. FULTON, Capt. R.F.A.

## "Unsavoury" Agitation.

Sir,—Notwithstanding the fact that Mr. Massac Buist states in his Notes in last week's (December 13th) *Tattler* that "the three leading aeroplane makers have wisely had no truck with the unsavoury agitation in favour of advocating British aeroplanes for the British army," I am surprised to see that makers like Vickers, Cody, Short, Roe, Howard Wright, Blackburn, Flanders, etc., are willing to persist in their opinions even at the risk of losing their prestige in the aeronautical world as delimited by Mr. Buist. Readers of *THE AEROPLANE* are ever eager for information in matters aeronautical, and would be glad to hear who, in Mr. Buist's opinion, are the three leading aeroplane makers in this country.

London, S.W. A CERTIFICATED AVIATOR.

## A Supporter of Home Industries.

Sir,—Will you kindly allow me to correct a mis-statement in your interesting comment on my article dealing with the Government aeroplane trials in your issue of December 7th? You say that I have entered the lists for the first time as a supporter of home industries, whereas, on the contrary, I have always exerted to this very desirable end, and I would indeed be a poor patriot if I hadn't. Far from being a new ally, I was the first journalist, as the *Westminster Gazette* was the first London paper, to promote aviation in this country on what might be justly described as a grand scale.

J. OWEN.

[Apologies to Mr. Owen. As a matter of fact, the phrase in question referred solely to Mr. Owen's valuable assistance in this particular agitation. Those who know Mr. Owen's writings in the past realise that he has always taken a keen interest in aviation, and that practically all the developments prophesied by him two years ago, when the first aviation meetings took place in this country, are steadily taking place. As a supporter of British industries, both motor and aeroplane, he has done excellent work.—Ed.]

## Aeroplane Speedometers.

Sir,—In his letter of last week, your correspondent, Mr. North, touches on a very interesting problem. In his third paragraph he suggests that by noting the effects produced by changes in wind speed and momentum on a delicately hung pendulum it might be possible to ascertain the real course which an aeroplane is taking when out of sight of land.

I recently designed an apparatus with which I am about to experiment, to ascertain the precise effect of acceleration and retardation on a pendulum. It seemed to me that to obtain results which would be of any value, it was in the first instance essential to eliminate (a) gusts of wind, (b) all movements of air due to momentum. I therefore proposed to suspend the pendulum in a vessel from which the air had been exhausted.

Under these circumstances, when the point of support of the pendulum was either stationary or travelling at a constant speed, the pendulum would hang vertically.

An increase in speed would cause the pendulum to swing back; a decrease would cause it to swing forward. The relation between the rate of acceleration and the period and amplitude of swing could be ascertained by experiment.

So far the principle is very simple; however, we soon arrive at a complication.

The increase or decrease in wind speed which produces a change in momentum will also, in all probability, change the angle of flight.

Gusts of wind and *remous* may give rise to momentary tilts. Thus it will be seen that effects similar to those produced on a pendulum by changes in momentum may be produced by other causes.

This difficulty could to a certain extent be compensated for by setting the vessel containing the pendulum in gimbals, and arranging the apparatus in such a way that the inertia of the "bob" of the pendulum was in excess of the inertia of the weight required to keep the vessel upright.

In the apparatus referred to above I have arranged matters in such a way that forward travel and sideways travel are indicated on separate charts.

When starting for a cross-country flight, the pilot of an aeroplane equipped with an apparatus of this kind would ascertain his real speed while covering a known distance, and then, by noting his changes in "land speed," would be able to trace his exact course.

I am of opinion that, by combining this apparatus in its final form with a reliable compass, the course taken by an aeroplane could be indicated quite automatically.

The utility of an instrument of this kind in marine and aerial navigation can hardly be exaggerated.

I offer this idea to Mr. North and others as one that will provide food for some very interesting experiments.

R. V. TRIV.

Sir,—Believe me, it is with but little pleasure that I venture to correct Mr. North. I hope he won't consider himself rent limb from limb, as my calculations here shown hardly entitle me to call myself a mathematician.

Mr. North seeks to prove that an aeroplane in turning in a circle of certain radius (in the air, not over the ground), under a certain amount of helm, will cause a pendulum to be deflected differently according as a wind is blowing or it is calm.

His argument is that in a calm the plane's momentum is MV on both sides of the circle, in a wind (MV+Mv), and (MV-Mv), and therefore the change of momentum in a calm is 0, in a wind 2Mv.

I hope to convince Mr. N. that this is not so.

Assume the wind east.

When the plane is heading east, in a calm its momentum is MV, in a wind (MV-mv), in both cases the direction of momentum being east. When the plane is heading west, the momentum will be MV, (MV+Mv), the direction being west.

The change of momentum in the case of the calm is MV (east) - MV (west) = 2MV.

In the case of the wind, (MV-Mv) east - (MV+Mv) west = 2MV.

So the change of momentum, and therefore the deflection, is the same in both cases. It might interest Mr. North to know that his error has been commonly fallen into by people arguing as to the necessary banking and "side-slipping" when turning in a wind.

North Kent.

JASKO.

## Aviation as a Profession.

Sir,—Re letters of F. W. C. and "Mechanic" on above subject, I think F. W. C.'s letter a very sensible one. If he refers to my first letter he will see that it was written with the intention of obtaining the views of other persons interested on the above subject. It has, to a certain extent, succeeded.

Apparently, I was labouring under a mistake with regard to the poor mechanic who has no money to back him up, but I don't think it is quite as bad as F. W. C. has painted it. Anyway, things will be better presently, and I bow to that writer's superior knowledge.

At the same time, taking aviation as a whole, it is a profession with a wide field for the hard worker. It is the same with aviation as with the other great businesses; it has its good times and its bad times, there are good positions and bad.

The man who will get on will be not the moneyed man, but the man who is a good worker in whatever position he takes up, and the one who can prove to others that he is a good man.

The editorial columns of *THE AEROPLANE* for September 14th, 1911, will show what I mean.

With regard to the Correspondence School my opponent misunderstood me. I do not suggest that simply because a man has the International Schools Diploma he should be employed at once, but the diploma will keep, and after the practical instruction is finished, the would-be aviator will be well provided with theoretical and practical knowledge.

The man with a few hundred pounds behind him, however,

will find no difficulty in making money at the aviation trade. "Aeroplane Mechanic" states in his letter that several aviation firms have closed their doors. I know of only two. Will he kindly give names and particulars of others, and I will be satisfied?

Richmond, S.W.

JEREMIAH JENKINS.

#### Told in the Office.

MR. J. V. MARTIN, the Grahame-White pupil who during the early part of the year flew so well at Hendon, called while over here on a short visit from the States. It will be remembered that Mrs. Martin was herself a very capable flyer, and it, therefore, gave us great pleasure to congratulate the aviator and aviatrix on the arrival of a little aviator, who is now about a month old.

Mr. Martin kindly gave us the photographs of his newest machine, which appear elsewhere. As may be seen, it is a kind of much enlarged Avroplane, but it has a number of distinctive points of its own. In the first place, the fuselage tapers very gradually, so that where the big empennage and tail flaps are fixed to it has considerable width, and so can be stayed up very stiffly to avoid twist. The control, as may be seen, is by means of a cross-bar similar to that first seen in this country on the Baby Grahame-White. There is, however, one peculiarity about the lateral control, which is that the ailerons work upwards as well as downwards, so that in case of using the controls to their fullest limit there is not anything like so much tendency to put a drag on one side, for obviously the raising of the aileron on one side will assist materially in compensating for the downward pull on the other side.

It will be noted on this machine that the casing of the fuselage is tapered off to the front, and that the engine shield is cut away on each side to let the air back from the cylinders. The big tank shown in front of the pilot is only used for long-distance work, as the small tank under the pilot's seat holds enough petrol and oil for a couple of hours' flying. The big tank can be replaced by seats for two passengers, side by side. Mr. Martin tells us that the machine does about 72 miles an hour, and that apparently it makes no difference whether it has got passengers on board or not.

As an example of the casual way things are done in the States, Mr. Martin related cheerfully an incident during the Nassau Boulevard meeting. He had flown some seven or eight miles from the aerodrome, and, owing to the engine missing, had come down in a cabbage patch. The engine was still running, but not running well enough to fly. Consequently, Martin drove the machine out of the cabbage patch on to the road, and calmly proceeded to take the machine back to the aerodrome under her own power. The span of the machine is about 30 ft., so the road must have been fairly wide to take it. At any rate, he managed to get back to the aerodrome without hitting anything, and his average speed for the distance worked out at about 25 miles an hour, which included a mile or two of what in American towns are called streets. Martin tells us that he has managed to get the machine very nicely balanced, so that she will fly quite comfortably without the pilot touching the controls at all. He has also been trying some very interesting, and, according to him, amusing experiments with a Blériot type machine fitted with hydroplane floats. These experiments are in view of a project he has in hand to fly across the Atlantic at a comparatively early date.

MR. HOWARD PIXTON, up for the R.Ae.C. dinner and the Manville Prize, said how delighted he was with his experiences of the Bristol monoplane. We understand that there is a project in hand under which he may have an opportunity of distinguishing himself considerably with this machine. Pixton is the winner of the biggest prize money of any British aviator this year, except, of course, Mr. Grahame-White and Mr. Sopwith, who won their money in America, but he remains the same modest, unassuming Pixton of old, and has by no means lost his fondness for Brooklands and its old associations.

MR. E. T. WILLOWS described an idea for a very nice little one-man dirigible which he is thinking of producing. The idea is that the balloon should have sufficient lift to carry itself and the pilot without the engine, and would be fitted with an engine capable of giving it a speed of about 15 to 20 miles an hour. By means of his patent variable angle propellers, the propellers alone would lift the weight of themselves, the engine, and the fuel, and in this way the machine would be able to reach considerable heights, while if the engine stopped it would descend quite slowly and comfortably. He knows he can produce a machine of this kind even cheaper than a cheap aeroplane, and it should certainly be a most amusing

vehicle for fine weather trips. There is some prospect of our seeing Mr. Willows and a good-sized passenger-carrying dirigible in the South of England before long, and there are doubtless many hundreds of people who would be only too pleased to have a trip in a dirigible at a moderate price.

MR. T. S. HARVEY, paying a short visit from Italy, says that the anti-English feeling at one time generated by the foolish anti-Italian attitude of certain British papers is now practically non-existent, as the better class Italians have appraised it at its true value. Mr. Harvey tells us that the Italian aeroplane contingent in Tripoli has been at work practically every day throughout the war, though detailed reports of their doings have not appeared in the papers. As he points out, the Italian engine mechanic is one of the finest in the world, and a particularly fine crew of them has been sent out to Tripoli. Consequently, in spite of the novel conditions, they have been able to keep the aeroplane engines in beautiful order. He also says that the Etich machine, with which Lieut. Gavotti was the first aviator to drop bombs in actual warfare, is a machine of that officer's own which he bought something over a year ago. Apparently it is very like the big Etich which was brought over here for the "Circuit of Britain," as it has an Austrian-Daimler engine of big power, and carries a passenger. There seems to be, on the whole, more flying done in Italy than in this country, and certainly the Italian Government realises not only the value but the need of aeroplanes better than our Government does.

MR. C. F. CHAMBERS, the latest Valkyrie pilot, called to express his satisfaction with the machine on which he has taken his ticket. He says that he finds one can handle the machine under almost all conditions simply with the rudder and elevator, and that it is scarcely ever necessary to use the ailerons at all. He gave us the impression that such accidents as have occurred on Valkyries have been caused by the pilot using the ailerons too much, and his belief is certainly justified by the fact that many accidents have been caused on machines of the ordinary biplane type in a similar way. In fact, Hubert's accident, which Mr. Chambers witnessed throughout, was almost certainly caused by hauling the ailerons down on one side and holding them there so that they acted as a drag on that side instead of lifting it. Mr. Chambers has the makings of quite a good pilot, and we wish him the opportunity of distinguishing himself before long.

MR. RONALD CHARTERIS, of the A.B.C. engine, informed us that he had recently been doing an unofficial test of his 40 h.p. engine at Brooklands. The engine was fitted with a propeller which apparently absorbed all the power of a 40 h.p. engine of another make, but the A.B.C. kept it turning at over 1,400 r.p.m. for something like 10 hours on end, and after 6 hours' run was actually turning it 50 r.p.m. faster.

MR. H. P. MARTIN, accompanied by MR. GORDON BELL, told us some useful facts about the Martin-Handasyde machine. On Tuesday last Mr. Bell took the machine up to 3,000 feet in 17 minutes without forcing her in any way. He had been asked by Messrs. Martin and Handasyde to give the machine a test and to see how she would climb if left to fly in her own way. Consequently Mr. Bell left the machine alone, and she went up quite steadily to the height stated, which must be something like a record, both in height and climbing speed, for a Brooklands-built machine. Mr. Martin was very pleased with the way in which Mr. Bell handled the machine, and Mr. Bell was equally pleased with the way in which the machine flew. A good many people, of whom the present writer has been one, are somewhat of the opinion that the extremity of the Martin-Handasyde fuselage is rather light for the work it has to do, but it might be pointed out that when Mr. Sopwith had his slight accident with the machine a few weeks ago, when one wheel sheared off, the machine careered along the ground on one wing tip and the tail skid, and yet nothing gave way in the fuselage. Mr. Martin also pointed out that the longitudinals of the fuselage are made of English ash, and so could stand an enormous amount of whipping before there is the least chance of their breaking.

MR. W. H. EWEN, having deserted Lanark for the time being, explained that he had moved to Hendon because of the lack of interest in aviation in Scotland at the present time, though it is undoubtedly his intention to continue work at the Lanark Aerodrome as soon as his fellow countrymen wake up. He is bringing with him his own 35 h.p. Deperdussin, as well as a 25 h.p. Blériot simply to be used as a rolling machine. He has got four pupils already booked to join him at Hendon, and, as he himself is a thoroughly competent flyer, we can recommend his school to those who want to learn to fly close to London.



### A Blackburn at Brooklands.

The first Blackburn monoplane to come to Brooklands as a permanency arrived last week. It is the property of Lieut. Spencer Grey, R.N., who will be remembered as a capable pupil of the Blondeau-Hewlett School, and it is housed in one of the Blondeau-Hewlett sheds. Mr. B. C. Hucks was at Brooklands on Saturday last testing the engine, but did not fly, as certain minor alterations are needed, this being of a somewhat different type from previous machines. The general appearance is decidedly taking, the engine housing and tank arrangement being particularly neat.

### Clarke Scale Models.

*Apocryph* of the paragraph headed "Technical Instruction in Dublin," THE AEROPLANE learns from Mr. T. W. K. Clarke, of Kingston, that his firm has just supplied a comprehensive selection of model-making materials, fittings, and accessories to the Technical Education Committee of the County Borough of Dublin for their workshops at the Bolton Street Technical Schools. Messrs. T. W. K. Clarke and Co. are at all times pleased to advise any technical schools taking up aeronautical work as to the selection of suitable fittings and materials, etc., and in the case of large quantities to allow a discount off their list.

In addition to the Dublin Education Committee, Messrs. T. W. K. Clarke and Co. have recently supplied the Board of Education at the Science Museum, South Kensington, with a very fine model of a military type Farman biplane, built to one-tenth scale, with all details reproduced as exactly as possible, even down to the very small wire strainers. This was copied from the machine built at Mourmelon by Henry Farman, and supplied to Mr. Claude Grahame-White at the beginning of 1911, so that it is exactly a model of the machine which broke poor Charles Hubert's legs during the Aerial Post Farce. As this particular type of box-kite is not likely to survive very much longer, since Mr. Henry Farman is now building his machines with a non-lifting tail and no front elevator, it is doubtless just as well that an absolutely accurate model should be in one of our museums, to give some idea of the quaint things we once regarded as flying machines.

The model will be found under a glass case in the Southern Gallery of the Museum, and Mr. Clarke, who has evidently built it with one eye on posterity, regards it as the best scale model he has ever produced.

### CLUB NOTES.

*N.B.*—Club Notes must be posted to 166, Piccadilly, to arrive not later than first post Monday morning.

**4th Clapham Troop Boy Scouts (Model Aero Section).**—December 9th, first meeting held. Mr. W. J. Smyk lectured on designs and construction of flying and exhibition models. Three models shown, Valkrie racer, Elvior 2-seater (exhibition models), and Smyk monoplane. Flying attempted on Clapham Common, but L.C.C. have prohibited model flying there. After lecture, questions asked, showed great interest. Mr. Smyk offered one model to first member to make and fly a model 125 feet.—C. H. GARDNER, Hon. Sec.

**Boote and District Aero Club (Late Liverpool Model Aero Club).**—Owing to number of members residing in Boote and district, it has been decided to adopt name as above. New Committee appointed as follows: John Hammett (President), Norman Huntington, S. Malins, S. H. Clemence, and A. G. Pugh (Hon. Sec.). First Class certificates under tests to be had on application to—ALEX GRINDROD PUGH, 39, Brook Road, Boote.

**Blackheath Aero Club.**—On Saturday last, practice at Kidbrooke. New tractor model, constructed by Rippon showed wonderful stability. Longest distance flown, 140 yards, 2½ oz. "Victor" monoplane flown by Clark made good flights, repeatedly flying out of ground. Hunt, Whitworth and Scott experimenting with "tractors," and Brough, Flizey Egelsst, Dodd and Trask made flights with monoplane and biplane. On December 23rd, at 2.15 p.m., impromptu competition for "Distance," and Committee hope to arrange "point-to-point" events on December 23rd and 26th at 2 p.m. Competitors to fly models to and from the three points of a triangle—total distance about 500 yards—member returning to start in least number of flights to win. Also "Duration" competition on Bank-Holiday at 2 p.m. Above competitions at Kidbrooke Ground. Usual practice flying at Blackheath and Lee. Secretary will present a prize to constructor of "tractor-screw" model doing longest flight, in straight line from start to finish—any day during Christmas holidays.—A. B. CLARK, Hon. Sec., 196 Brockley Road, Brockley, S.E.

**City of Liverpool Aero Club.**—Club will hold Open Exhibition of Models early in January, particulars announced later. Interested members please note that subscription is 5s. per annum.—ROBERT N. HARRISON, "Denhurst," Victoria Park, Wavertree, Hon. Sec. (pro tem.).

**St. Mary's Model Aero Club (Portsmouth).**—Main object of interest this week was Messrs. C. and E. Retal's 6 foot Wright type machine, which was tested as glider, and proved to be a very quick riser. Mr. Elburne made good flights.

**Worcester Model Aero Club.**—Meeting of above club held in club room on 16th. E. W. Harrison was elected assistant secretary. Animated discussion on "Fuselages" and "Types of Models," after which Mr. S. A. Sears (secretary) gave address on Propellers and Elastic motors. Next meeting, Boxing Day at Fitchcroft flying ground at 10 a.m. All interested cordially invited. First competition on January 6th.—E. W. HARRISON (Asst. Sec.).

**Brighton and District Model Aero Club.**—Excellent flying at Brighton-Shoreham Aerodrome Saturday, 16th, Bate, Burr, Lope, Wichmann and Knowles all doing well. Flying next Saturday (23rd) at Shoreham. Also Boxing Day. New year members apply to Hon. Sec.—A. Von Wichmann, "Kingleade," King's Way, Hove.

**Birmingham Aero Club.**—On Saturday, E. Try-ly, with new twin propeller model, showed promise of doing well. Other members getting good results with new models. Construction of elider is now well advanced, two wing frames being nearly complete.—E. W. HARRISON, Hon. Sec.

**Wanstead and District Model Aero Club.**—Model Aero club being formed in districts of Woodford, Wanstead, Leyton, and Leytonstone. Meeting being held at Lammis Villa, Buckincham Road, Woodford, January 4th, at 7.30 p.m. All interested cordially invited. Further particulars from H. S. Green, Acting Sec.

## The Aeroplane,

166, Piccadilly, W.

Telegraphic Address: AERLON, London.

Telephone: Mayfair 6407

### SUBSCRIPTION RATES.

THE AEROPLANE will be forwarded, post free, to any part of the world at the following rates:

UNITED KINGDOM			ABROAD		
	s.	d.		s.	d.
3 months, post free	1	8	3 months, post free	2	9
6 "	3	3	6 "	5	6
12 "	6	6	12 "	11	0

Cheques and Post Office Orders should be made payable to The Aeroplane and General Publishing Co., Ltd., and crossed, "A/c of Payee only," otherwise no responsibility will be accepted.

Should there be any difficulty in procuring THE AEROPLANE from local newsgates, each issue can be obtained direct by forwarding remittance as above.

## THE FLANDERS MONOPLANE

60-80 H.P. Green Engine (Circuit of Britain Type). One, two, or three seaters.

Pupils taught on monoplane with double control. £10 returned in event of no damage.

L. HOWARD-FLANDERS & CO., Brooklands, Weybridge.

TUITION  
£75  
INCLUSIVE

E. T. WILLOWS LTD.

STOCK  
DIRIGIBLES

"City of Cardiff" Type, to carry 4, £900 complete.

New Light 2-Passenger Model - £370

24-32 VILLA ROAD, HANDSWORTH, BIRMINGHAM



**MISCELLANEOUS ADVERTISEMENTS**

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words 1/6; Situations Wanted ONLY—18 words 1/-, 1d. per word after.

**PATENTS.**

**PATENTS.** Instructive leaflet free, from Stanley, Popplewell and Co., Chartered Patent Agents, 38, Chancery Lane, London, W.C.

**MACHINES.**

**£600** COMPLETE. For the easiest machine to handle, the most stable, the most compact, you must see the Avro Biplane. For passenger and cross country. A. V. ROE AND CO., Brownsfield Mills, Manchester.

**W**ANTED.—Farman or similar Biplane, with or without engine, in good condition and reasonable. CHANTER AND CO., Brighton Aerodrome, Shoreham.

**ENGINES.**

**A**ERO ENGINE, 25-30 h.p., made especially by Advance Company, nearly new and in excellent condition, owner abroad, will accept £30. Apply—LIEUT. DIXON, R.N., R.N. Barracks, Chatham.

**PROPELLERS.**

**P**ROPELLERS.—Avro propellers of proven efficiency. "Pashley fitted Avro propeller, suddenly found troubles disappeared, and flew five good circuits." [AEROPLANE.] Equally good results if fitted to your machine. A. V. ROE AND CO., Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS**

hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

**"BLACKBURN"** propellers supplied, and successfully used on all the leading motors. THE BLACKBURN AEROPLANE CO., Leeds.

**FINANCIAL.**

**T**HE IDEAL MILITARY MONOPLANE.—Well known firm require further capital for completion of this machine, which has ALL the essential details required to make it a sure success in the forthcoming trials. "MILITARY," c/o THE AEROPLANE, 166, Piccadilly, W.

**EMPLOYMENT.**

**A**VIATION. The British and Colonial Aeroplane Co., Limited, builders of the "BRISTOL" AEROPLANES, are now prepared to take a few selected premium pupils in their Works (or a thorough course in Aeroplane construction. Apply, stating age, educational qualifications, etc., to THE SECRETARY, Filton House, Bristol.

**P**ILOT, with experience of six monoplanes and two biplanes, is open for engagement. Offers to Box 412, c/o THE AEROPLANE.

**TUITION.**

**A.S.L.** SCHOOL OF AERONAUTICS. Tuition in all branches of aeronautical engineering; remunerative scholarships to pupils attaining certain standard of efficiency.

**A.S.L.** SCHOOL OF FLYING Tuition on biplanes and monoplanes; numerous machines; expert instructors; every facility. AERONAUTICAL SYNDICATE, LTD., Flying Ground, West Hendon,

**£25** TUITION until brevet is won on Blériot and Chanter monoplanes; or £25 including all breakages. CHANTER, Brighton Aerodrome.

**£50** TUITION in flying till certificate is won. Three-quarters of the prizes at Weybridge during 1911 won by AVRO pupils. The AVRO School for most thorough and all-round instruction. A. V. ROE AND CO., Brownsfield Mills, Manchester.

**£75** TUITION for Aviator's certificate on both Deperdussin and Blériot Monoplanes. Insurance against breakage and third party risk.

**£15** RETURNED to pupil in the event of no breakage. Perfect equipment. Personal instruction. Write for agreement form. W. H. EWEN, Hendon Aerodrome, London, N.

**H**ERBERT SPENCER Flying School, Brooklands Aerodrome, Weybridge. Tuition and practical constructional work from £40. Passenger flights from £2 2s.

**B**ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION CO., 185, Hope Street, Glasgow, or Barrhead.

**D**EPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; thorough tuition £75, including breakages and third party insurance. Apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD., 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

**F**ILEY AERODROME. Tuition on Blackburn or Blériot Monoplane. For particulars apply BLACKBURN AEROPLANE CO., Leeds.

**MISCELLANEOUS.**

**H**ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**FLYING MODELS.**

**T**HE ideal Christmas present is a "Mann" Monoplane which will outlast a dozen so-called "cheap" machines. This wonderful record-breaker can again be supplied at 15/- post free by return of post, but after Dec. 31 the price will be considerably increased. Don't get left behind, order now! To advertise the sets of parts (5/6) for building a "Mann" ( $\frac{3}{4}$  mile type), we are giving a 2 oz. bottle of "Willis" lubricant to every purchaser, and we are making the same offer to every buyer of a "Mann" geared winder (5/6), a pair of "Mann" propellers (3/6), 2 dozen yards of our  $\frac{1}{2}$  inch (3/-), or 3 dozen yards of our  $\frac{3}{8}$  inch rubber (2/9). "Willis" lubricant can also be obtained separately at 9d. per 2 oz. and 1/3 per 4 oz. bottle. Everything post free in United Kingdom, carriage forward abroad. Place your orders early to avoid the rush with WILLIS BROS., 14 Wellington Square, Hastings.

**T**OO WINDY for flying? NOT if you have a "Distinctive" Monoplane. "Distinctive" Propellers most efficient. List 1d. M. ROLFE, Chilton and Sudbury, Suffolk.

**M**ODEL PROPELLERS—Genuine CHAUVIERE—sin., 10in. and 12in. diameter, always in stock. Geo W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.

**N**EW Catalogue of Model Aeroplanes. Accessories now ready. J. BORN AND CO., LTD., 97, New Oxford Street, London, W.C.



# THE AEROPLANE



Edited by CHAS. G. GREY. ("Aero-Amateur")

Vol. I.]

THURSDAY, DECEMBER 21st, 1911

No. 29

## 'AVRO'



Machines are small and compact and require low engine power, hence the cost of upkeep is reduced to a minimum. Safest machines and easiest to handle.

A.V. ROE & Co., The Aviators' Storehouse,  
Brownsfield Mills,  
MANCHESTER.

## STABILITY.

## BLACKBURN

### MONOPLANES & PROPELLERS

For Durability, Stability, and Efficiency.  
**TUITION.**

Write for prices and particulars to—  
The BLACKBURN AEROPLANE Co.,

Phone: 2822 Central. BALM ROAD, LEEDS. Telegrams: "Propellers, Leeds"

## The All - British GREEN Aero Engine for RESULTS

The Green Engine **does** things.

- 1909 J. T. C. Moore-Brabazon won the "Daily Mail" £1,000 Prize, offered to the first Britisher to complete a Circular Mile flight—with a "GREEN."
- 1909 J. T. C. Moore-Brabazon won the first Michelin Cup for long distance flight, 17 miles—with a "GREEN."
- 1910 S. F. Cody won the Long Distance Michelin Competition, 182 miles—with a "GREEN."
- 1910 In the Patrick Alexander Competition, the only competitor to complete 24 hours' run—was a "GREEN."

It helps to make history.

- 1911 S. F. Cody won the Cross Country Michelin Competition, 125 miles—with a "GREEN."
- 1911 S. F. Cody won the Long Distance Michelin Competition, 261 miles 800 yards—with a "GREEN."
- 1911 For the Circuit of Great Britain one "GREEN" entered, one "GREEN" engine finished, untouched, in any respect, 1,040 miles' flight.
- 1911 The first "Higher Certificate" was won by S. F. Cody—with a "GREEN."

**Performances like these must count**

Catalogues Free.

THE GREEN ENGINE CO.,

Sole Licensees under The Green's Motor Patents Syndicate, Limited,

55, BERNERS STREET, LONDON, W.

Makers for the Patentes: The Astor Engineering Company, Limited.

## VALKYRIE MONOPLANES.

THREE TYPES.

40—80 MILES AN HOUR.

FROM £280.

ALL BRANCHES OF AERONAUTICAL ENGINEERING.

ALL STANDARD TYPES OF AEROPLANES,

DESIGNING AND CONSTRUCTION.

PROPELLERS A SPECIALITY.

TUITION FREE TO PURCHASERS.

PARTICULARS ON REQUEST.

THE AERONAUTICAL SYNDICATE, LTD.,

ESTABLISHED MARCH, 1909.

COLLINDALE AVENUE, WEST HENDON, LONDON, N.W.

Telegrams—"AEROVALKY, LONDON."

Telephone—KINGSBURY 24.

"THE AEROPLANE," DECEMBER 29, 1911.

# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

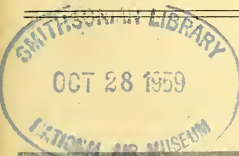
12  
WEEKLY

Vol. I.] [REGISTERED AT THE G.P.O.]

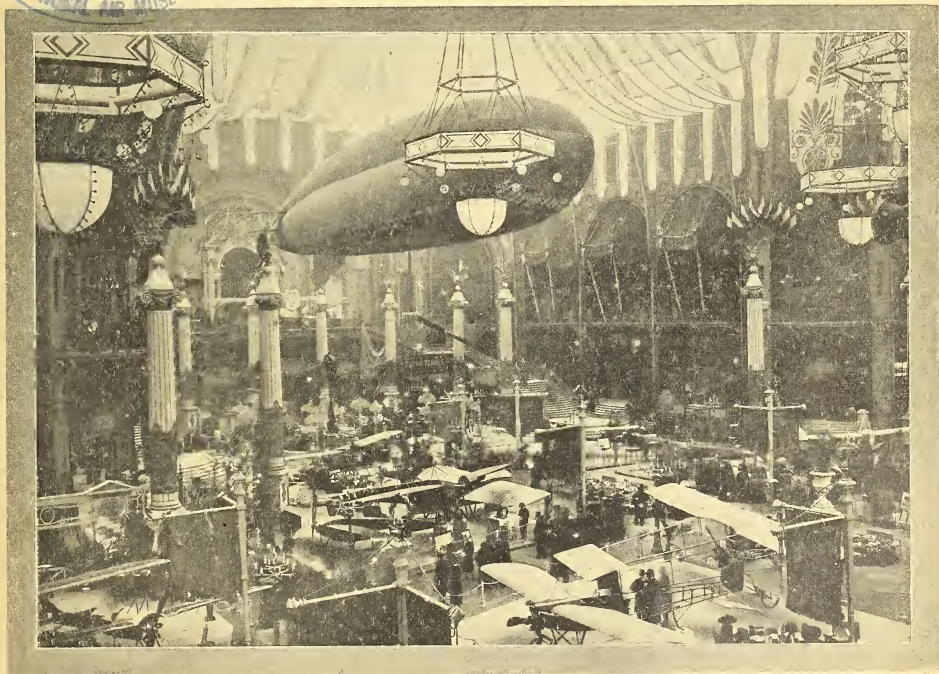
AS A NEWSPAPER.

FRIDAY, DECEMBER 29th, 1911.

No. 30



## A REAL AEROPLANE SHOW.

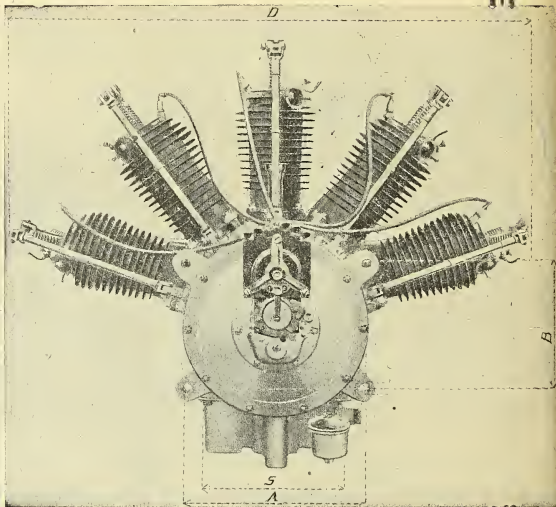
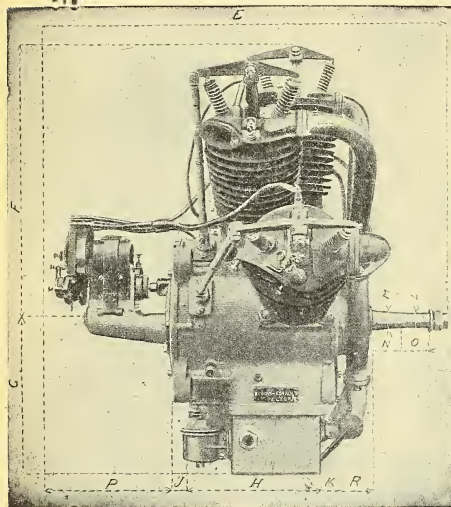


The Paris Show, looking at the central section. In the left corner are the Military Deperdussins. In the right are the Sommers. In the centre are the Nieuports. Above them is the Aviatik. Farther on the right are the Blériots, and between them and the Aviatik is the Bristol. Behind the Aviatik may be seen one of Chauvière's enormous propellers, and, up in the roof, an Astra dirigible, of the three-chamber type,

SMITHSONIAN INSTITUTION 1911



# VICKERS R.E.P. AVIATION MOTORS.



H.P.	WEIGHT.	BORE.	STROKE.	PRICE.	No. of CYLRS.
40 50	240 lbs.	4"	5.5"	£480	5
60	330 lbs.	4.4"	6.4"	£560	5

Gibert, flying in the Circuit of Europe, using this engine, completed the whole course without changing his motor.

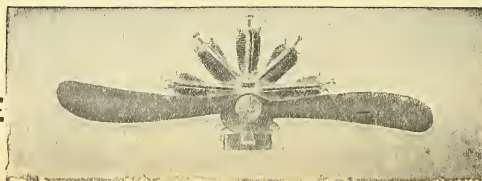
## APPROXIMATE DIMENSIONS.

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
50 H.P.	11.4"	8.25"	71"	38.8"	30.6"	20"	11"	9.25"	1.38"	1.18"	1.18"	1.57"	1.96"	2.67"	10.9"	39"	2.68"	9.84"	83"
60 H.P.	14.15"	10.25"	79"	47.2"	33.4"	24.6"	12.4"	10"	1.32"	.98"	1.34"	1.73"	2.56"	2.36"	11.3"	39"	3.62"	13.8"	91"

## SPECIFICATION OF ENGINES.

5 Cylinders, Air-cooled, Fitted with Bosch Dual Ignition. Self Starting on Accumulators. Develop H.P. advertised at 1,200 Revs. per min. (normal speed). Can be throttled to run at 400 Revs.

VICKERS LIMITED, Vickers House, Broadway, Westminster, S.W.



## CONTENTS.

	PAGE		PAGE
EDITORIAL OPINIONS...	699	NOTES ON HYDRO-AEROPLANES	
AIR CURRENTS	702	By C. FLEMING WILLIAMS	714
THE FRENCH SHOW	703	THE PLAN-FORM OF AN AEROFOIL	
THE WEEK'S WORK...	713	By P. K. TURNER	715
		CORRESPONDENCE	717
		CLUB NOTES	718

## Editorial Opinions.

## The Wily Teuton.

M. J. Gache, who is one of the best informed of French writers on aviation, writing in *L'Aéro* during October, gives his opinion on German military aviation in an exceedingly trenchant manner. M. Gache had returned recently from a holiday in Germany and Austria, and is, therefore, considerably better qualified to speak on this point than is the average journalist in this country or in France.

According to his idea the Germans are purposely making what is colloquially known as "a poor mouth" over their military aviation. That is to say, the German Press is deliberately, and under orders from high places, making out that their military aeroplane forces are far and away worse than the French, and almost as bad as those of Great Britain, the idea being that if the Germans themselves cry out about the neglect of military aviation the other Great Powers will pay little attention to Germany's air power, and will not make any very strenuous efforts to keep ahead. But in the meantime, under cover of this slackness of the other countries, Germany is straining every nerve to build up an air fleet which shall as soon as possible equal that of France, and shall ultimately surpass it.

As M. Gache points out, it is not long since France was herself proclaiming her superiority in military aviation; now France has become extremely modest on the subject, whereas the Germans are for ever calling out about the immense superiority of France, and, as M. Gache says, if France had half the air power the Germans pretend that she has, France could take things very easy for the next ten years. According to him, the German Press, and even the German Army, are under the impression that every French mechanic employed in boring out cylinders accompanies his work with cries of *Vive la Patrie! A bas l'ennemi!*

But the position in Germany is rather different in reality. Hear what M. Gache has to say on the subject.

"We shall not be duped; we know exactly what Germany is doing. When its Government announces that it is 'going to take steps,' and that notably it is going to decentralise the military school at Döberitz, we can tell them that it has already been done. Officers are training at Friedrichshafen and at Bitterfeld, where they complete their theoretical instruction after experience in factories and military aviation schools. Every civilian aviation school has a military section, or is organised on military lines.

"Are facts and names necessary? Is there not Euler's school at Darmstadt where Lieuts. Wirth,

Wolfskeel and Lauterbach have taken their brevets? Was not a school opened at Munich as long ago as the 1st of June with Capt. Hiller as director, and Lieut. Wildt as instructor? And now in October the German Government announces that it is going to decentralise. But what is the good of labouring the point? The cause, as I have said, is understood. We are still in front of the whole world in aviation, and we know it, but we know also that our neighbours are trying to overtake us, and that we shall only maintain the distance which now separates us by all of us, people, army constructors, and aviators, keeping up the same patriotic spirit, the same will to make efforts, and the same willingness to sacrifice ourselves."

It would be well if only some of the British daily papers which are read by the masses of this country would take up this subject of the sudden increase of military aviation in Germany, and would bring it home to our apathetic and unimaginative people that military and naval aeroplanes must ultimately be the saving of this country.

## Fire

Within the last few months several aviators have been killed under circumstances made more ghastly by the fact that they and their machines have been burnt, though in almost every case it has been impossible to tell with any accuracy whether the machines have caught fire in the air or whether they have caught fire after striking the ground.

From the popular point of view either accident is sufficiently horrible to justify it receiving considerable attention from the daily Press, but from the aviator's point of view, regarding the matter philosophically, it matters very little after a man has been killed in a fall whether he and his machine are burnt or not, except for purely sentimental reasons.

There is, however, also the third contingency in which a man may be merely stunned by a fall and owing to the machine catching fire on the ground may be burnt while in a state of unconsciousness; or possibly he may be still conscious but unable to extricate himself from the wreck, and it is to be feared that several victims have suffered this appalling fate. Therefore, one of the great problems before aeroplane constructors at the moment is the absolute prevention of fire on aeroplanes.

It should be quite an easy matter to prevent a machine from catching fire in the air. A broken valve is always liable to allow an explosion to flash back into the carburettor, and set the carburettor and float chamber alight, but that in itself should not be



a very serious matter, for it is only necessary in such a case so to case the carburettor in a steel or asbestos jacket so that flames from it cannot possibly reach any inflammable material about the machine, and once a fire is discovered, of course the pilot's first impulse would be to turn off his petrol, and so shut off the supply of fuel for the fire. In the case of an engine without a carburettor, and using a plain jet or an injector, it is practically impossible for a genuine fire to happen, because the suck of the next cylinder on the inlet stroke will naturally suck the fire along with it, though in engines where the mixture is fed through the crank case there is always the possibility of an explosion occurring inside the crank case itself, and doing quite a considerable amount of damage. However, in a general way there seems no great difficulty in preventing fire in the air.

The matter of a machine firing on the ground is, however, considerably more difficult. The most common cause of fire is apparently that on the first shock of striking the ground the petrol tanks burst and the petrol gushes out, so that if any metal part of the machine in coming to rest strikes sparks out of a stone, the whole thing is likely to catch light, and it is also possible that under similar circumstances the engine may keep running for a few moments, and so fire the spilled petrol.

Considering the flimsy ill-made brass tanks which are used on so many machines it is only wonderful that more such accidents have not occurred, and it appears as if a certain degree of immunity can be obtained against this type of accident by using thoroughly well-made steel tanks which are welded, and not soldered, at the joints. Of course, even steel tanks will burst under a really bad shock, and though it would add somewhat to the weight, it appears to be essential that the tanks themselves should be covered by some sort of lagging, which would, at any rate, so delay the exit of the spirit if the tanks burst that the engine would have ceased to run, or the machine would have ceased to slide along the ground, before the petrol actually got out in large quantities. It has been suggested that the tanks might be covered with leather or asbestos, and it would be worth while to try experiments with both.

There is, however, a still better way of doing away with the trouble, and that is either to use solidified petrol, if it can be produced at a commercial price,

and used in a handy way, or better still, to do away with the use of petrol altogether, and use common paraffin. There seems to be no particular reason why paraffin should not be used, except the fact that it is not generally used on motor cars; but aeroplane engine designers have met and overcome far worse difficulties than this, and the writer would commend the use of petroleum to the consideration of engine designers.

As a matter of fact, paraffin is immensely preferable in many ways, for it is considerably cheaper, and actually inherently contains more power for its volume than does petrol.

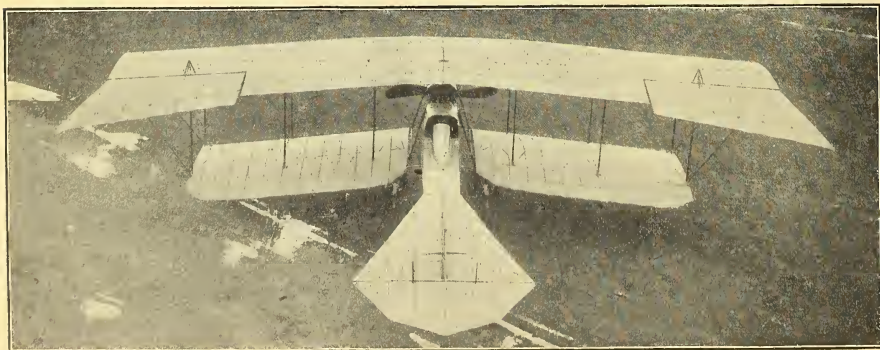
### Flying the Atlantic.

When in England recently, Mr. J. V. Martin, as was duly noted at the time, gave some particulars of his plans for flying the Atlantic. As Mr. Martin pointed out, it is obviously absurd for anyone who is not thoroughly well acquainted with Atlantic weather conditions to attempt the trip. He himself is a master mariner, and is also an instructor in nautical astronomy at Harvard University, and knows all the conditions of Atlantic weather from many years of experience. During late July and early August the prevailing winds across the Atlantic blow from the north-west, and are moderate in strength, and he, therefore, relies on getting an extra 20 to 30 miles an hour over a great portion of the journey.

The machine he proposes to use will be a biplane somewhat of the Avro type, and it will be fitted with floats in case of being compelled to come down in the sea. The fuselage and all struts and so forth will be carefully stream-lined, so as to reduce head resistance to a minimum, and it will be driven by two tractor-screws. Mr. Martin intends to fit the machine with five Gnome engines of 50 h.p. each, all capable of being coupled in a simple and ingenious way with the tractors. The machine itself will have a span of 100 ft. and a chord of 10 ft., as it will be necessary to lift a load of 5,000 lbs. of fuel to feed the enormous engines. The crew will consist of two pilots and one mechanic.

Mr. Martin's idea is to start with all five engines running and get up to a height of at least 5,000 ft. At that height he will cut out one of the engines and let it rest while running on the other four, that engine being ready to cut in immediately if anything goes wrong with one of the others. As fuel is consumed, and the machine grows lighter, it will then be possible to run with three engines only, and if anything goes wrong at the last moment the machine will be able to get home with only two engines.

Mr. Martin proposes to start his trip from St. Johns, in Newfoundland, and to land on the coast of Ireland, the distance between the nearest points being barely 2,000 miles. Even under not too favourable circumstances he reckons to be able to do this distance in a matter of 40 hours, and with luck he ought to be able to do it in 30. The scheme may possibly sound to some people a mere piece of Yankee bluff, but, as a matter of fact, it is quite a possible proposition.



Back view of the Lohner-Daimler "Pfeil-Flieger," illustrated last week.

THE

**GRAHAME-WHITE****FLYING SCHOOL,****The London Aerodrome, Hendon, N.W.,***The finest equipped and most accessible Aerodrome in the United Kingdom.***CONSULT US—DON'T DELAY.****COMMENCE NOW****A COURSE OF TUITION AT THE BEST SCHOOL,****WITH THE****BEST METHODS, MACHINES AND MECHANICS,****When Your Success During 1912 will be Certain.***Among the many successful Pilots trained at our school are the following:—***J. ARMSTRONG DREXEL** (Leading Amateur).**CLEMENT H. CRESSWELL**, Late Chief Pilot,  
Grahame-White School (1st U.K. Aerial Postman).**CHAS. HUBERT**, Pilot, Grahame-White School  
(1st U.K. Aerial Postman).**J. V. MARTIN**, Chief Pilot - Constructor, Queen  
Aeroplane Co., New York, U.S.A.**LEWIS TURNER**, Chief Pilot, Kennedy Aviation  
Co., St. Petersburg, Russia.**W. RIDLEY-PRENTICE**, Manager, The Aero-  
nautical Syndicate, Ltd., Hendon.**J. L. TRAVERS**, Engineer-Pilot, Messrs. Short Bros.,  
Eastchurch.**E. F. DRIVER**, Pilot, The African Aviation Syndicate,  
Ltd. (1st U.K. Aerial Postman).**NAVAL LIEUT. O. DAHLBECK**, Chief Pilot,  
Swedish Navy.**W. C. ENGLAND**, Managing Director, Burmah  
Aeroplane Syndicate, Rangoon.**MRS. C. DE BEAUVOIR STOCKS** (First Lady Pilot to carry a Lady Passenger).*Write for terms and particulars to—***THE GRAHAME - WHITE AVIATION CO., LTD.,**

PROPRIETORS OF

'Phone—  
KINGSBURY 22.**THE LONDON AERODROME, HENDON, N.W.**Wires—"VOLPLANE" or  
"CLAUDIGRAM, LONDON."



## AIR CURRENTS.

## Rival Competition-Mongers.

The Government of the Kingdom of Barataria having decided to increase their aerial fleet (at present comprising twelve deficient and four and a-half defective aeroplanes), a competition has been instituted by the War Office of that flourishing and enlightened country for the purpose of discovering, or evolving, the best type of military machine. Details of the competition are as follows:—

Prizes.—Really not worth mentioning.

The War Office to have the option of refusing to purchase any machine awarded a prize.

Calm weather for the tests will be supplied free, but makers must provide their own ploughed fields, etc., for landing purposes.

The place of collection of the fragments of machines and engines which have been through the official tests will be announced later—that is, if any of the debris is worth retrieving.

The machine must:

(1) Be delivered in a packing case not exceeding 9 feet by 3 feet by 4 feet, such case to be plainly marked in large letters "TEA." This is to deceive the enemy's aerial scouts.

(2) Carry a live load of 500 lbs. (if the pilot and observer together do not reach this figure, the deficit may be made up by adding small children or domestic pets), besides instruments, etc., and refreshments for 24 hours. The nature, etc., of the instruments, etc., is not specified, but the list will probably include a theodolite, heliographing apparatus, astronomical telescope, and full sized concert grand.

(3) Climb at the rate of 500 feet per minute, loaded as in Clause 2, although a rise of 1,000 feet per minute is desirable. (So are lots of other things, but it doesn't follow that we are going to get them.)

(4) On no account exceed a speed of 35 miles per hour in a calm.

(5) Emulate the feat performed by Mr. Rodgers, U.S.A., who recently planed down six miles from a height of 4,000 feet (see official log). Any competitor caught switching off at 4,001 ft. will be disqualified.

(6) Rise without damage from, and—

(7) Land without damage on any cultivated ground, including ploughed land, meadow hay just ready for cutting, and a hop garden, in a calm, loaded as in Clause (2), it being understood that the phrase "without damage" refers solely to the aeroplane. It must be capable of being steered while running slowly on the ground, but at anything over 10 m.p.h. the pilot may urge on his wild career regardless of direction.

Furthermore, likewise, and in addition:—

The pilot and observer must each be completely enclosed in a bullet-proof steel turret, and must have an unbroken view of the country in all directions. Dual control must be fitted, and should any difference of opinion arise between them as to the course to be steered or the handling of the machine, they had better toss up for it.

All parts of aeroplane must be strictly interchangeable; e.g., in the event of the propeller bursting the rudder may be removed and attached to the shaft as a substitute.

The maker shall accurately supply the following particulars, which will be verified by official test, so if he tells any naughty tarradiddles he will just jolly well catch it:—

Number of cylinders; length of crankshaft in millimetres; whether engine is rotary, radial, or V-type, and if not, why not; amount of oil absorbed by tail-planes per hour at declared h.p.; and whether the machine is really intended to fly or not.

Also desirable, but not compulsory:—

Stand still while running. Or, conversely, run while standing still.

Effective silencer fitted to pilot, who might otherwise express his candid opinion of the competition within hearing of the official observers.

Collection and delivery of parcels—this point having been unaccountably omitted in a similar competition recently announced.

Invisibility on ground or elsewhere—a characteristic already possessed by the majority of the alleged aeroplanes now owned by the Baratarian Army.

Stability in flight is of great importance, and the machine

should be capable of doing a tail slide in a fifty-mile wind 30 ft. from the ground without undue risk to the pilot.

Moreover—Can anyone think of anything else, please? If so, don't hesitate to mention it.

M. L. ELLIOTT.

\* \* \* \* \*

## America and Aviation.

The following comes from an American correspondent, and is published, with apologies, as an example of literary style:—

"Americans are 'way behind in flying matters, as you know, of course, due partly to the want of real courage and enterprise of the U.S. men, who prefer stock manipulation to derring-do, and partly because the ridiculous Wrights hold all the patents down so hard that no one dare try to fly minus their permit. Wasn't that a raving piece of foolishness, that 'gliding' stunt of one of them's a while back? These papers *actually* took it seriously. Most of 'em wrote 'stories' on these lines:— 'There you are, you see! While the effete European is howling about what he's going to do some time, and stupidly getting killed out of mere spectaculariness, here's our man, saying nothing, working away, producing marvels like this! Hooroar! for the Wrights, who do things!' Never occurred to them that anyone can, and lots have, run a glider up a hill and off the edge and let it fall to the bottom." Rather hard on Orville, but one can't wonder!

\* \* \* \* \*

## All About Airships.

A book has been received for review entitled "All about Airships," by a Mr. Ralph Simmonds; the title page further enlightens one that it is for boys. One is rather glad of this last piece of information, since one wonders in reading the book for whom it could have been written, and why.

Mr. Simmonds informs his readers that he is indebted for much of his information to the kindness of various people; which suggests that in some instances this information has either been treated with a thick coating of Simmonds or else that his informants have been "pulling his leg." He remarks, in one place, that the Nieuport monoplane body is like "an ordinary long violin case on its edge on the floor"; and, again, that you can get a rough idea of a "Demoiselle" by procuring "a metal triangle, such as is used in bands or orchestras, and placing it on its base on a table and holding a flat sheet, for the plane, across the apex!" (The author does use an exclamation mark here.) Perhaps the musical critic of some daily may possibly have had a hand in this.

It is permissible, by the way, to congratulate Mr. Simmonds on his success in having extracted some really excellent photographs from the afore-mentioned generous people. These photographs are excellently reproduced, as, indeed, is the whole volume, though the line drawings are more humorous than educative.

The author is, however, at his best when making statements on his own account, in which connection the following excerpt may serve as an example and adorn the tale. The subject being "air-pockets," the author is commenting on Hoxsey's death. "He was coming down from a big altitude in a spiral *not plané* when his machine slipped sideways, apparently running into one of these holes." This statement may be meant to conjure up a fairly accurate mental picture of an "air-pocket," but, despite the tragedy of its subject, it rather gives one the impression of an anxious bunny making tracks for its sheltering burrow.

In his summary Mr. Simmonds remarks that "People should respect their great airmen as they respect their great admirals." Quite so, and one would also respect Mr. Simmonds more did he refrain from using the term "airman," which he does consistently throughout the book; in which, it is to note, he habitually includes aeroplanes among "airships." In fact, the whole of the reading matter is in that indescribable style which is believed by modern daily journalists to be graphic and impressive, but is merely tawdry and irritating.

\* \* \* \* \*

## Defence for the War-Plane.

An aviator suggests that the best defence for war-planes would be to paint them to resemble *remous*, and then the enemy's machines would steer clear of them.

## The Paris Aero Show.

The first feeling of any Englishman entering the Grand Palais during this, the fourth French Aero Show, and the third "International," ought to be one of shame for his own country. When one looks around the huge building and sees machine after machine shown by firms established as solid commercial enterprises, backed by big manufacturing concerns in other businesses who realise that in time the construction of aeroplanes is going to be as sound an undertaking as anything else, and when one thinks that a rich and influential organisation such as the English Society of Motor Manufacturers and Traders has practically decided not to hold a show next year because it has lost a few hundreds of pounds in the past over badly run exhibitions, it really makes one despair of English enterprise and English business capacity. It convinces one more than ever of the accuracy of Napoleon's estimate of national character when he called the English a nation of shopkeepers, and that at a period when England was growing as a manufacturing country, whereas to-day it seems that the Englishman tends to become less a manufacturer than a middleman, a mere distributor.

True we have designers and constructors in England able to turn out aeroplanes as good as anything in the Grand Palais, but where are the business men with money at the back of them? Where are the men like Baron Henri Deutsch de la Meurthe, who is behind the Astra, Train, and Nieuport businesses; Sloan, Vinet, and Deperdussin big motor-body builders and coach-builders who are making aeroplanes; Bréguet, the rich engineer; Blériot, who practically risked his lamp business for the sake of his faith in his aeroplane; Clément, the great motor and cycle manufacturer, with his dirigibles and aeroplanes; and many other rich firms who can see far enough ahead to realise the great future before aviation?

All we can show against them is the single-handed undertaking of Sir George White, and the comparatively recent enterprise of Vickers Ltd. Practically every other British machine is the outcome of the personal keenness of some one individual, who is, as a rule, struggling along on his private means and hoping for the best. The few outside firms who have hitherto made any attempt at aeroplane building in England have allowed themselves to be swindled by rogues or deceived by fools, while the really sound designers have been starving for lack of support.

The more honour, therefore, to the one British firm which has dared to go to Paris and show its products against the best the world can produce, and let me

say, here and now, that there is nothing in the Show to beat our one representative. There may be points of design or details of construction wherein one may disagree with those responsible for the Bristol Monoplane, but, taking it all round as an efficient flying machine, there is nothing to be seen which one can honestly say beats it. Others may be as good, and quite possibly are as good, but I did not see anything better. The only pity is that some of our other really clever designers had not the chance of showing as well.

Taking the Show all round, one sees at once the truth of Captain H. F. Wood's remark last week, that the machines shown are either fast monoplanes, bigger and rather slower tractor biplanes (or double monoplanes, as some of them are called), and biplanes pure and simple, otherwise box-kites; the scarcity of these last showing them to be at least obsolescent.

Most of the machines are duly described as military machines, but there is also a tendency beginning to show itself in the direction of producing the light, cheap, sporting machine at a price within the means of the moderately well-to-do man.

There is, however, a lack of actual progress, due probably to the number of big competitions on the Continent which have practically obliged the makers to concentrate their ideas on producing faster machines of a type they already know without developing real aerodynamic design. To this extent the Show is disappointing, but as in exhibition of the aeroplane's growth from the quaint toy of a few enthusiasts into its present position as the acknowledged arbiter of the fate of armies, the Show is startlingly instructive. Germany, Russia, Italy, Turkey, and other countries have had regularly appointed commissions of officers sent to investigate and report on the Show. The naval and military attachés of every embassy in Paris have spent much profitable time educating themselves in the latest developments. England alone, of the Powers to-day acknowledged as Great, has shown no particular interest, except for a casual visit by our excellent naval attaché, an officer who has not yet figured largely in connection with aviation. Presumably, those fine sportsmen, the four or five officer-aviators of the Air Battalion, have by now visited the Show in their private capacities, but as a nation we remain content with our two (or is it now three?) really modern and effective war-planes. Still, what can you expect of the shopkeeper who grumbles systematically at having to pay rates for an efficient police force? However, THE AEROPLANE is here to tell those interested in aviation what is to be seen in Paris, so let us to our discourse. C. G. G.

### The Bristol Monoplane.

Naturally every Britisher who goes to the show makes for the Bristol stand first of all, and, be it said, everyone else in the place spends a good deal of time there, for, though only one monoplane is shown, it is full of interesting points. The cased-in fuselage, the balanced elevator and rudder, and the skids with the spring tips, are, of course, already well known to readers of THE AEROPLANE, but various alterations have been made in detail, and to-day the machine is undoubtedly one of the very finest and fastest machines in the world. The engine is now placed well in front of the body proper, from which it is separated by aluminium sheeting, so that in case of the carburettor catching fire there is no danger of the flames reaching the pilot or any inflammable part of the machine. Below the

pilot and passenger are windows made of a non-inflammable celluloid, which my friend Herbert Thomas tells me is acetate of cellulose. If these windows can be kept moderately clean, they should be most useful when flying high, though, as a matter of fact the passenger is placed so far forward that he can see right down over the front edge of the wings. The machine is fitted up with all the comforts of a home; maps, vacuum flasks, field-glasses, and various other little fittings being neatly stowed where the passenger can get at them without interfering with the pilot.

A neat little fitting is a new wheel attachment, invented by Gordon England, by which the axle-cap, and afterwards the wheel itself, can be detached by simply pressing a button and undoing a milled nut. Another new point is that the rear portions of the skids are laminated and shod with steel, so that on



landing they act as very effective spring brakes. The tail skid, which hardly ever comes into use, is now simply a plain strip of wood, hinged at the front end, and sliding at the rear end in a neat sheet-steel guide. It is worthy of note that all the fuselage and skid joints are of sheet-steel, and that the wood-work is not pierced anywhere.

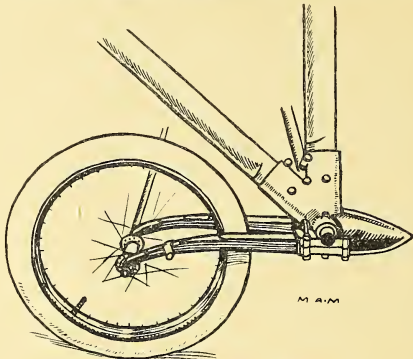
Another neat idea is the fitting of a slip arrangement to the end of the fuselage, by which a pilot can anchor his machine to a convenient tree, or to a stake in the ground, start up his engine, get back into his machine, let the engine out at full power and then slip the catch and get off at his best pace.

That the only British exhibit is attracting the right sort of attention is shown by the fact that the commissions of naval and military officers, sent by the Governments of Germany, Russia, Italy, and Turkey, have given more than usual attention to the machine, and that the naval and military attachés of the various embassies in Paris have paid several visits. The British naval attaché, Captain Kelly, R.N., has also shown considerable interest. Altogether, we may well be proud of the sole British exhibit, which seems to keep those in charge of it, including Mr. Stanley White, Mr. Harry DelaCombe, and Mr. Pierre Prier, extremely busy. A good show of propellers, beautifully made and finished, in charge of Mr. Dashwood Lang, also attracts considerable envious attention, and Mr. Stern, the firm's Paris representative, seemed, as usual, to be carrying on conversations in three or four languages at once with visitors from all over the world.

#### The Blériot Exhibit.

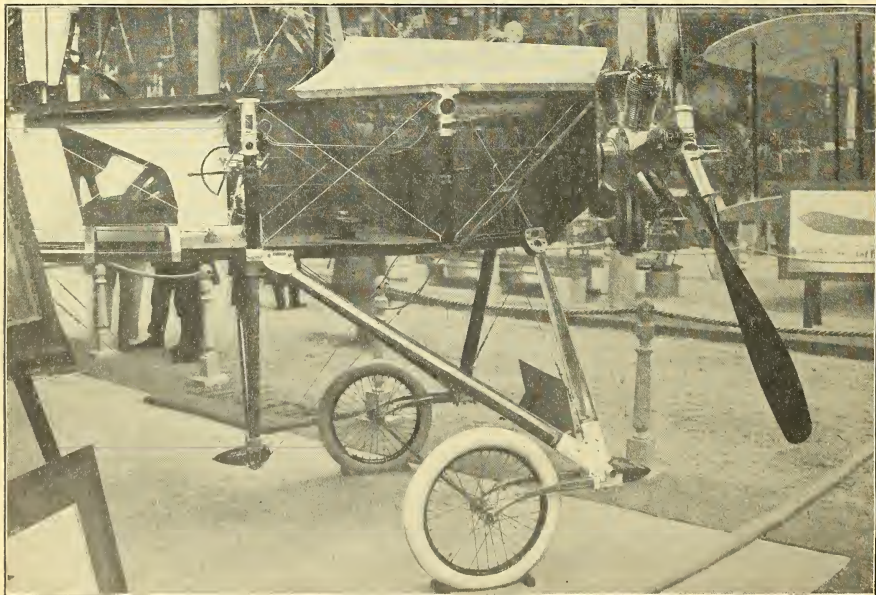
M. Blériot shows, on his own stand, four unusually interesting machines. The centre of interest is certainly the type XXVII., a speed machine pure and simple. The fuselage tapers off in the fish-tail fashion already used in the new two-seaters, but the front of the machine is quite novel. The aluminium casing in front of the pilot tapers almost to a point, and the motor, a 50 h.p. rotary, is hung out in front of everything. The chassis is cut down to four stream-line struts, and the wheels are carried on laminated springs behind the main axle. Mr. Norbert Chereau, the popular British manager for M. Blériot, tells me that the machine does about 80 to 85 m.p.h., and that it has been flown already by Lieut. de

Conneau and Alfred Leblanc. By the way, I was glad to see de Conneau about the show every day, apparently none the worse for his accident at Reims.



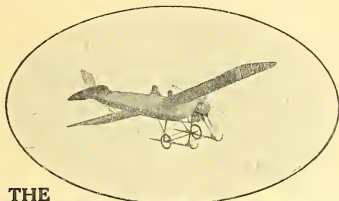
Details of the new Blériot chassis.

The second machine of interest on the stand is a new small single-seater, the type XXVIII. This is, more or less, like the old familiar type XI., but it is fitted with the new 30-35 h.p. Y type Anzani engine. The elevator is of the "Circuit" type, with flaps behind the tail proper, instead of the old ailerons at each end of the tail. The chassis is cut down as much as possible to save weight and head resistance, and the nose of the fuselage is tapered with the same object. The whole machine is very well-turned out, and Mr. Chereau assures me that it is practically as fast as the type XI. with a 50 h.p.



The new Blériot high-speed scout, with the side open for inspection. No cowl is fitted over the engine, streamline form is given to everything, even to the wheels on the warping pylon. The new chassis should be noted.

**Over 60 m.p.h.  
carrying passenger.**



THE  
**"BRISTOL"**

**MILITARY (Two-seater) MONOPLANE**

**THE ONLY BRITISH MACHINE  
AT THE FRENCH SALON.**

**SEE STAND No. 27.**

The "Bristol" Flying Schools secure the best results

**The British & Colonial Aeroplane Co., Ltd.,  
FILTON HOUSE, BRISTOL.**

# REPAIRS

To the Gnôme or  
any other make of  
. . aero engine .

Damaged engines rebuilt,  
and nothing but work-  
manship of the highest  
possible standard, by

**HESSE & SAVORY**

**ENGINEERS**

**TEDDINGTON, S.W.**

The **DEPERDUSSIN** Monoplane,  
British-Built 1, 2, or 3-seater

**WORLD'S ALTITUDE RECORD**

(With Passenger)

9,800 feet in 55½ minutes, by PREVOST, on the 3rd December, on the "Deperdussin"  
3-seater Military Type, used in the final of the French Military Aeroplane Competition.

**THE DEPERDUSSIN MONOPLANE SCHOOL AT BROOKLANDS**

With more Machines than at any other Monoplane School in England.

THOROUGH TUITION ON  
DEPERDUSSIN MONOPLANE **£75.**

Including All Expenses, Breakages if any, and Third Party Insurance.

**A Prize of £15 is offered to all Pupils who obtain their Pilot's  
Certificate without Breakages.**

**"Deperdussin" Monoplanes, complete with Engine, from £450**

APPLY FOR PARTICULARS TO

**The British Deperdussin Aeroplane Syndicate, Ltd.,**

**30, REGENT STREET, LONDON, S.W.**

**Works - Newington Green Rd., N.**

Phone : 280 Gerrard,  
& 130 Byfleet.

Wire :  
"Monodep, London."



engine, yet it is being sold for £350, as Mr. Chereau says, to encourage the sport. If there are not many sportsmen ready to-day to put down £350, it is, at any rate, a step in the right direction, and it must be remembered the machine is not simply a "school" machine, for it is guaranteed to do a non-stop flight of two hours.

The other two machines on the stand are an ordinary type XI., of the latest kind, and a big "fish-tailed" two-seater of the type XXI. kind. This machine is noteworthy, because a pair of pedals are fitted in front of the passenger so that he can, in case of emergency, take control of the rudder through these pedals, and by reaching slightly sideways can control the *cloche*. This machine has a 70 h.p. engine, and is capable of doing between 60 and 65 m.p.h. The pilot and passenger, seated side by side, have a easy view over the front of the wings.

It is worthy of note that the speed machine is fitted with a variable pitch propeller, so that the pilot can run his engine at speed without the machine starting away, and then can, so to speak, let his clutch in, and get off. The type XI. and the type XXVIII. machines are painted with a brown "dope" which gives the wings a beautiful surface, and should make them quite weather-proof, but one is so used to the white-winged Blériots that the brown ones look quaint at first. Altogether, a very fine exhibit, and worthy of the pioneer firm.

#### The Nieuports.

The Nieuport firm show three machines, two of them being 50 h.p. machines of the standard type, as flown by M. Chevalier at Brooklands. The third is, however, of more interest, as it is one of the little 28 h.p. machines only seen in England at Eastchurch. This has been inproval in detail since the Gordon-Bennett race, and the cowl which protects the driver is now brought right forward, so that it practically covers the crank-case of the little two-cylinder horizontal engine, making, as nearly as is humanly possible, a stream-line body of the whole machine. Otherwise the machines remain exactly as they were in the middle of the year, the fastest and most efficient machines in the world. The chassis is certainly no tool for the inexperienced flyer, but Weymann, Hélén, Chevalier, Mr. Barrington-Kennett and others have shown that it is all that is needed by the expert.

#### The Deperdussin.

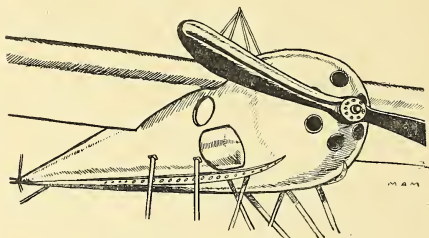
The Deperdussin people are always thorough in their doings, so they have indulged in the luxury of two stands, one for purely military machines, in charge of M. Aubrun, and one for mere civilians, in charge of M. Pascal. On the military stand is shown a 100 h.p. three-seater and a 50 h.p. single-seater, the latter being sold to a Russian pilot with the original name of Agababoff, and a duplicate to an Algerian, M. Servis. The machine is practically identical with the one Mr. Valentine flew in the "Circuit of Britain," but, if anything, there is a more pronounced lift on the tail. The big military three-seater, with the 100 h.p. engine, is a magnificent job, though in design it is practically a scale reproduction of the little machine. The machine itself is the one on which Prevost took a passenger up to 3,000 metres and broke the world's passenger record. A little detail which will cause some relief to army men who are called upon to fly Deperdussins is that the yellow flag painted on the tail has now been replaced by a respectable tricolor.

On the "commercial" stand is a single-seater, similar to the little racer at Brooklands, and fitted with a Y type 30-35 h.p. Anzani. A very neat machine altogether, and

approaching in price the machine for the man of moderate means. The other machine on this stand is a two-seater similar to Lieut. Porte's big machine. By setting the wings slightly further forward and altering the disposition of the tanks, the passenger is now placed so far forward that he can see right over the front of the wings and have a really good view downwards. A noticeable point in all the Deperdussin passenger machines is the size of the wheels fitted.

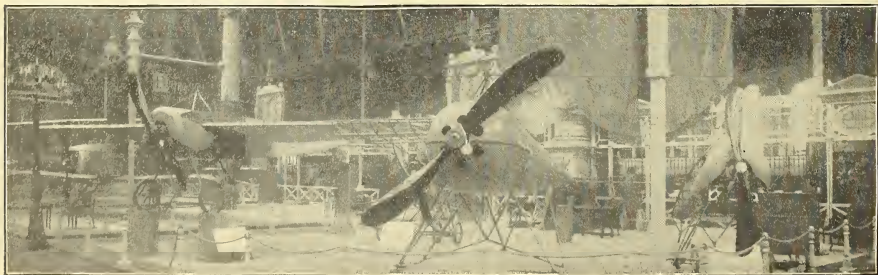
#### The Morane-Saulnier.

One of the most fascinating machines in the show is the new Morane, designed by Morane and Dr. Saulnier since their severance from the Borels. Evidently the partners have high ideas, for, apart from their ordinary monoplanes, which are best described as a mixture of Morane, Nieuport, and a Blériot, they have blossomed forth with the beginnings of an enormous torpedo-shaped two-seater, built entirely of sheet steel, with wings of a steel tube construction which must be immensely expensive. In the machine on the stand only a section of the wings are shown. It strikes one, however, about this machine that there will be considerable difficulty in cooling the engine, for, under any circumstances, a rotary engine of more than 50 h.p. does not cool too well, and when all the air it gets has to come through the comparatively small holes shown and to pass out through the gill-like opening at the side, it looks as if there may be trouble.



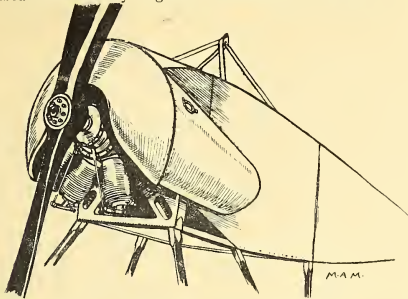
Details of the Morane Torpedo.

The finished single-seater is really a beautiful little machine, and I am told its speed is terrific. The two other machines on the stand are a "school" machine, fitted with the popular 30-35 h.p. Y type Anzani and a "military" two-seater with a 50 h.p. rotary engine. It will be noticed that both these machines have four wheels, with a kind of improved Farman suspension, instead of the two unsprung wheels of the single-seater. It should also be noted that the chassis struts of the single-seater are of light large stream-line section steel tube, which makes a splendid job, and should be better than wood for the purpose. The warping gear in these machines is also somewhat different from most. The lever, with a little wheel on top, like the wheel on the Blériot *cloche*, has a rocking movement fore and aft, for the elevator, but when moved sideways it works a tube lying longitudinally on the floor of the fuselage. This tube has on it a chain-wheel, and over this a chain runs to the warping-gear, which is a brass eccentric running on ball bearings and carried on the apex of two big streamline tubes. The rudder is



The Morane-Saulnier stand, one of the few with real novelties on it.

worked by the usual foot-bar. The Morane-Saulnier combination is evidently a strong one, and much should be heard about their military single and two-seaters in the future.



The approximate streamline housing for the Morane-Saulnier power-plant.

#### The Aviatik.

The Aviatik is, to all intents and purposes, an Alsatian-built Hanriot. Whether it is German or French seems rather a moot point, for, though of German nationality, the Alsatians remain French by sentiment. The engine used is an Aviatik, built by the Rossel firm, which is somehow allied to the Peugeot motor people. This engine is a 100 h.p. vertical, with the cylinders cast in pairs and all valves on top, altogether a plain, straightforward, workmanlike job; but the old-type shallow fuselage is retained, with all the tanks and other tackle on top, so that it can scarcely be said to conform to modern aerodynamic design. The chassis has been altered, and now carries four wheels all on one long axle, and in the centre of this axle is mounted a kind of rake, intended to act as a brake on landing. The Aviatik is Germany's crack monoplane, and has done exceedingly well in competition, having won prizes to the amount of 306,000 francs. The passenger machine shown is said to have a speed of 115 kms. (69 miles) per hour, so the engine must be immensely powerful, considering the amount of head-resistance in the chassis. A notable point is the new wing curvature, which has a true Phillips entry similar to that of the Nieuport, and probably accounts largely for the efficiency of the machine as a whole. The control has been altered to the popular wheel warp and rudder-bar arrangement, which is becoming practically a standard type.

#### The Vinet Monoplanes.

Two Vinet monoplanes are shown. One with a five-cylinder Viale is much of the ordinary type with two wheels and a pair of skids, an open fuselage, and a flat triangular tail, which has a very decided lift. There does not seem any particular reason for the machine, as it is not even as taking to look at as last year's machine shown by this firm. The other machine has at least the excuse of novelty, if not of originality. Imagine the fuselage of a baby Nieuport mounted on a pair of tiny wheels with rubber suspenders à la Farman, but with the skids a foot above the wheel axle, which is supported on angle-irons below the skids. Then on top of the fuselage imagine three pairs of uprights, and on top of them a pair of Blériot wings and an engine. The result is a thing half-way between a Nieuport and a Train. Apparently, the whole idea is to get the pilot below the wings, where he can see the ground. Obviously the centre of gravity of the machine is a yard too low, and to make matters worse, the tail and rudder are fixed on the fuselage, and so are feet below the flying level of the main planes.

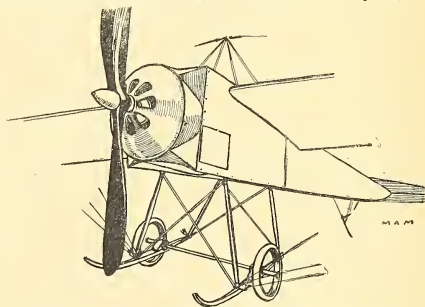
#### The Sommer Biplane.

Roger Sommer shows a steel-built biplane, which is one of the few original machines in the show. At first sight it looks like one of the new racing Farman's, plus a tiny elevator, scarcely big enough to lift its own outriggers, stuck out in front. On investigation, one sees that it has only four up-rights, each of these being a girder arrangement of light steel tubes. On each end of the upper plane is what looks like a "military" extension, but is in reality an aileron—in its proper sense—like those on the old-type Blériot tail, these ailerons being the same chord and section as the planes themselves. They are held simply by a steel tube from the end of the lower plane and a couple of stay-wires. The whole arrangement

looks horribly flimsy. The pilot, as in the Farman's, is stuck out in front on a kind of ladder; the passenger has, at any rate, the satisfaction of sitting on the plane. The chassis consists simply of six steel tubes, arranged three at each end of a long untrussed axle, which apparently will need renewing after every second or third landing. The planes themselves are of rather a good section, and should be fairly efficient. There are several quite neat little pieces of design in the arranging of the steel tubing, but, taking the machine all round, it is chiefly notable as a piece of misguided ingenuity, and the worst of it is that it flies quite well. A monoplane of approximately Blériot type is also shown. This has a single big tail flap with the rudder above, as in the first Howard Wright monoplane, and has an A type chassis. It must be fairly efficient, as it carries 262 kgs. on 16 square metres of surface, has risen to 500 metres in 5 mins. 5 secs. with a 300 kgs. load, and has flown at 108 kms. per hour.

#### The Farman Exhibition.

Messrs. Maurice and Henry Farman, now one firm, make an excellent display of cups which have been acquired by pilots of their machines. Two apparatus are also shown; one is a biplane of the box-kite type, with the planes "staggered," i.e., with the upper plane in front of the lower, which must be aerodynamically inefficient, though it has the advantage of allowing the machine to "pancake" softly. Presumably the firm, being under the necessity of making a chassis stand up in rough landing, have chosen to save the chassis at the expense of efficiency. In other respects the machine is of the ordinary Maurice Farman type, with a scaffolding arrangement in front to hold the front elevator. A monoplane, of



The engine housing of the Farman monoplane, }  
Note the square corners.

Henry Farman's design, is also shown. Aileron flaps are used, which is not in accordance with the general trend of modern design. The engine is covered by a cowl, with ventilator holes and square corners, which suggest considerable head-resistance and some difficulty in cooling the engine. The general finish and workmanship of the machine is not that to which one has become accustomed by the leading firms, and altogether the Farman exhibit was a decided disappointment to me and to other visitors of my acquaintance.

#### The Albatros.

Although by no means a lover of Germany or anything that appertains thereto, I must, in common justice, admit that the Albatros biplane is quite a taking machine. Like most things German, it lacks originality, but the combination of which it is compounded has produced a really novel machine. Actually the machine has an Etrich upper plane, empennage, elevator and rudder, an Avro fuselage, Farman skids and wheels, with an ingeniously strutted chassis and a wing-strut arrangement of its own, by which the uprights between the upper and lower planes are placed diagonally, both laterally and longitudinally, so that they act in tension or compression, as required. Another peculiarity is that the back-swept tips of the upper plane are warped upwards, so that in correcting a lateral swing the wing which is too high is forced down, and any drag caused by the warping swings the machine round so as to lift the lower side. The system certainly has advantages over the ordinary aileron, and even over the ordinary warp, but is not quite so good as a properly balanced warp would be. The engine is an Aviatik-Rossel, and the radiators are neatly stowed along the "breast" of the fuselage, where they get plenty of draught and cause little resistance. The skid-struts are mounted on laminated springs, to give play between them



and the skids themselves, and the skids again are sprung Farman fashion on the wheel axles. At the rear of each skid is a little rake-brake, which ought to be useful on occasion. The machine has ample double control. Apart from the wooden tension members, which I do not think can be reliable, I put the machine down as being one of the best in the show.

#### The Clement-Bayard.

Whatever one may think of the Clement-Bayard dirigible, there is no gainsaying the fact that the Clement-Bayard biplane is one of the handsomest and most business-like machines in the show. The only real objection to it seems to be that the centre of gravity is a trifle low, the short lower wings coming out of the fuselage fairly high up, while the long upper plane is a considerable height above the pilot's head. The whole machine is built of steel, and is really well designed. The engine is boxed in neatly under a pointed bonnet, with the radiators in front like those on a Metallurgique racing car. The chassis is rather nicely arranged. There are two long wooden skids, supported on steel tubes, and behind them are tracking wheels fitted so close up that they could not possibly catch in a hole. The springing of the wheels is done more or less in Blériot fashion, but with the tension rubbers horizontal. The control is by concentric steering pillars, the inside one working the rudder wires and the outside one the warp and elevator, by rocking on a universal joint.

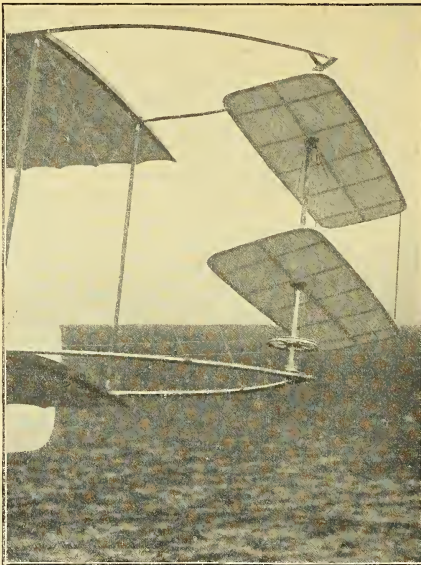
The wings are of oak, stayed with steel, and are of a very good section. They are arranged for quick dismantling, as are the rudder and elevator, so that the machine can comply easily with military conditions. If the machine flies anything like as well as it looks, it ought to be very well worth watching if it comes over for our military trials.

#### The Enormous Astra.

One of the biggest machines in the show is the Astra biplane, another of the many Avro-type machines. I bear this machine a grudge, for I confidently expected it to distinguish itself in the French military trials, and said so. Unfortunately, it did not, and I am now publicly marked as a false prophet, though why it failed I cannot see, and must lay the blame on the engine or the pilot. The machine is quite nicely made, albeit the old type hook-and-eye joint for the main plane struts used in the earliest and original Wright biplane is still used by the Astra Company, who are the Wrights' representatives in France. The chassis is the familiar central-skid-with-a-wheel-on-each-side, used by many firms and originated by Mr. Handley Page two years ago. There are seats for three, all tandem. The two rear seats are fitted with controls, the front one, just behind the engine, being for the observer, who is thus slightly in front of the main planes, and has an excellent view. Altogether, the machine looks a good, sound piece of work, and if it is not a first-class weight-carrier it ought to be.

#### The Canard.

The Voisin Frères show a single Canard, a machine which has been so often illustrated and described in THE AEROPLANE that it is not worth while doing so again in detail. This particular machine has three floats, set at approximately the same angle as the wings. There are no less than six vertical curtains between the main planes, as well as ailerons. The rudder is in front, just behind, but above, the elevator, and the whole elevator moves, instead of having only a section movable. It

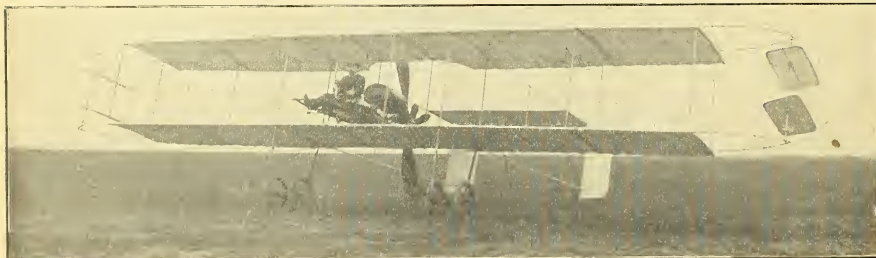


The Bronislowski Ailerons in detail.

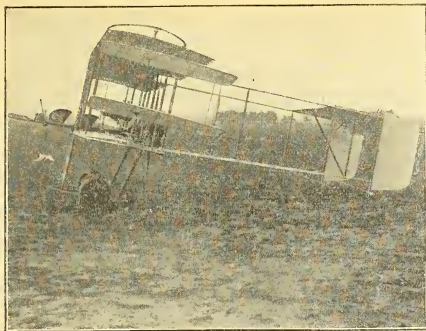
is interesting to note that the rear supports of the floats are sprung, the front supports acting as pivots for the spring action. The whole machine is built of steel tubing. Though the machine is obviously useless for naval work, it should make an amusing pleasure machine, or even a useful weapon for coast defence.

#### The Bronislowski Stabilisers.

This machine is at first sight a Henry Farman biplane, with weird little biplane ailerons at the ends of the planes, but M. Bronislowski took much trouble to explain to me that he had merely chosen to exhibit his stabilisers on this type of machine because it was one of the three types which fly really well. As will be noted from the illustrations, the auxiliary surfaces, or ailerons, turn on a vertical shaft. In normal flight they are in apteroid aspect and at a pronounced dihedral with the pair on the opposite wing-tip. Thus they give a little lateral stability before they are moved at all. When the machine heels over the action of the ordinary warping lever rotates them so that the air strikes one pair on the upper surface and the other pair on the lower, thus depressing one side and lifting the other. The surfaces are so arranged that the head resistance on each side



M. Bronislowski on his Farman-type biplane fitted with his patent ailerons.



Side view of the Bronislowski ailerons.

is equal and so one can stabilise laterally without using the rudder. By careful experiment M. Bronislowski has found the particular shape of surface which operates best, and, by a simple arrangement, the angle of the surfaces can be varied to suit the load the machine happens to be carrying. The reason for having the axes somewhat out of centre is simply so as to give the surfaces a tendency to trail into a non-operative position when the machine is flying straight. The idea is really well worth studying carefully, for it has undoubted advantages over ordinary ailerons, and may quite conceivably be better than a warp. Certainly it is not "eyeable," but possibly that objection could be overcome, and would have to be overcome, for somehow in its ultimate form of development everything has to be good to look at as well as to use.

#### The Reps.

Mr. Robert Esnault-Pelterie shows only one complete machine, and the stripped chassis and fuselage of another. The one complete machine is, however, redder and Reprier than ever. In general design there are no real alterations since last year, but the machine shown, which is similar to the one flown by Gibert in the European Circuit, is deeper in the breast and seemingly shorter than that shown last year. Though the Rep was not competing in the French military trials, and has not done anything very startling just of late, it must not be forgotten that Gibert, who was fifth in the European Circuit, was the only man who got through from end to end on the same machine with the same engine without making any serious repairs. Also Gibert was well up in the Michelin Cup competition, though he started for it too late in the year to get in a really long day's flying as Hénel did. It is always wonderful to me that the Rep is not more popular than it is, for it has beaten pretty nearly every other machine and engine in the world at one time or other, and I can only assume that the enormous price of the machine stands in the way even with Governments.

#### The Bréguets.

Two Bréguets are shown; one with a 100 h.p. Chenu engine, a new machine altogether, and the other a weather-beaten warplane with a rotary engine of 140 h.p., said to be the machine

on which Moineau took and prize in the French trials. This machine is, in detail, practically the same as the British army Bréguet, except for the engine. It is worthy of note that in the trials the machine lifted a load of 560 kilogrammes, and got up a speed of 114 kms. (69 miles) per hour.

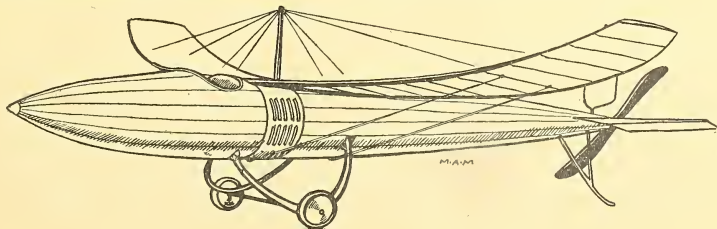
The other machine, which rejoices in the name of "Nelly," is a regular aeroplane *de luxe*, having a body fitted like the inside of a car, with let-down steps and a side entrance. The pilot has in front of him an electric indicator, like those fitted on cars, so that the observer can signal his wishes to him. One can imagine the proud owner's joy on giving his first signal for a *vol plané*, and his horror on finding that his pilot's idea of a *vol plané* exceeded his own idea of a *vol piqué*. His only chance would be promptly to make a dab for the button labelled *descente* and hope for the best. The engine is fitted right under a streamline bonnet, and is silenced, so the machine carries two Klaxon horns, presumably with different notes, with which to "Morse" to the ground. Altogether, a very interesting exhibit.

#### Picot du Breuil.

This is a weird and wonderful monoplane with a vast main plane, scicrular as to its entering edge in plan, minus all ribs, and resembling an enormous unstuffed quilt in general appearance. The engine and pilot are placed below it, and the cased-in fuselage only begins behind the pilot's seat. The tail is on the same lines as the main planes, and resembles an empty cushion cover. When at rest the wings droop to the ground on each side and give the whole apparatus a faint resemblance to a gargantuan blue hen guarding imaginary chickens. Such machines are always a trifle pathetic, both because of the babe-like faith of their inventors, and because of the waste of good money which is so badly needed by men who can make real flying machines.

#### The Paulhan Torpedo.

Among a fine array of Régy propellers is shown the much-discussed Paulhan Torpedo, and I am still trying to find someone who will say for certain whether it is simply a freak, or the beginning of the machine of the future. The general outlines are well known, the pilot sitting up to his neck in the body and in front of the wings. The wings themselves are practically flat on top, and have a pronounced convexity underneath, so that they seem to have been turned upside down. The engine is just behind the pilot, and about level with the front of the wings. From the engine a tubular shaft runs right aft to the propeller at the tail; elevator and rudder being in front of the propeller. M. Régy, who explained the machine to me, avers that it does 160 kms. (or about 100 miles) per hour, and says that though in its experimental stages it has had some very nasty smashes, the pilot has never been hurt, because the body longitudinally all converge to a point, and so form an immensely strong buffer; also if the machine alights very much down by the nose the torpedo front acts as a skid. Another great peculiarity about the wings is that the rear spar is fixed, but the front edge warps about two inches, which is enough to correct almost anything, the turned-up tips, designed by Victor Tatin, attending to ordinary rolling. The heroic pilots of this astounding projectile are Godard and Frey, the latter the same man who spent seven hours in a ditch with two broken arms and a broken leg, last May, in Italy, and who won the big Italian cross-country race only four or five months later. One thing is certain about the Paulhan machine, namely, that as a military machine for desperate high-speed strategic reconnaissance it is something like the right thing, if it will fly in a wind and can be got round corners.

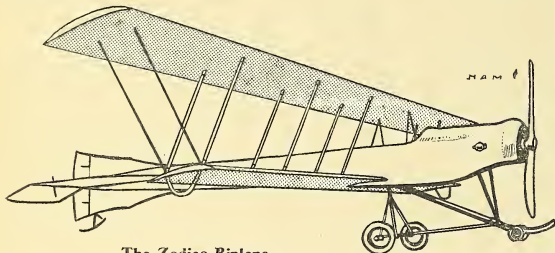


The Paulhan Torpedo shown in detail.



### The Zodiac

The Zodiac machine is, like the Astra, an enlarged and elaborate Avro, but with the planes staggered, the upper plane being in advance of the lower. The aspect ratio of the planes is extremely high, but as there is a big camber on the planes there must be considerable interference between the planes, which are rather too close together. The chassis is the ordinary long central skid, of the Antoinette type, with two sprung wheels behind it. The fuselage, as in all modern machines, is cased in, and terminates in a flat empennage, with a single big rudder and elevator flaps.



The Zodiac Biplane.

### An Automatic Stability Machine.

An uncommonly interesting machine is the monoplane shown by Sotinel, Guérin, and Corneloup. In general appearance it is like the early Blériot, with the tips of the wings acting as ailerons, an arrangement still used by Goupv and Pivot. As a matter of fact, the main planes are mounted on a frame of their own, from which the fuselage and chassis are slung. On the top longitudinal on each side of the fuselage is mounted a rocking arm which is coupled to the tube which works the movable wing-tip, the tube running along inside the wing. If a gust lifts one wing it swings up, and the opposite wing swings down, but, at the same time, the rocking arm decreases the angle of the wing-tip on the raised wing and increases the angle on the tip of the depressed wing, thus restoring them to a level position.

Of course, this action depends on the pendulum action of the fuselage and chassis as a whole, but owing to the casing of the fuselage and the action of the tail fins, there should be less tendency for the pendulum to swing to an undue extent. In turning a sharp corner the outer wing naturally rises, and so opposes its surface to centrifugal drift, at the same time the lift is automatically decreased and that of the other wing is increased. So the total lift remains fairly constant without allowing the machine as a whole to overbank. The amount to which the wings swing can be con-

trolled by the pilot with an ordinary wheel, and the remainder of the controls are of the ordinary kind. The inventors do not regard their machine as a perfected article, and call themselves simply an "experimental society," so one may not quarrel with minor faults of construction, but must consider the idea as a whole.

Though I am personally opposed to any form of pendulum control or automatic "gadgets," I cannot help thinking that the firm may have here the beginnings of a really great idea.

### The Train Monoplane.

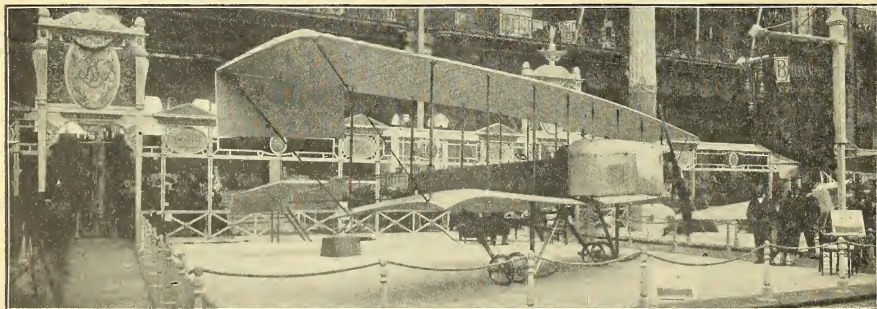
The Train monoplane is, as has often been said, a kind of enormous Demoiselle, built entirely of steel tube. It is shown on the Hutchinson stand, along with a white Nieuport, and the two machines are really about as good as anything in the show. The Train, purely for observation purposes, owing to the pilot's position below the wings, is ideal for observation purposes, and, though I personally dislike the idea of sitting underneath the wings, and of having the engine above, even if in front, the machine is so beautifully made that one cannot help believing in it. The main-stay cables are held by an excellent system wherein the cable wedges itself into a socket, and the bigger the load the tighter the hold. Except for one or two little details of this kind, all good in their way, the machine remains unchanged since the lucky M. Train came over during the European Circuit.

### Sirius.

M. O. Rincheval shows a neat little 30 h.p. two-cylinder horizontal engine called the Sirius, quite nicely designed and cheap. But the real novelty on the stand is a sheet-steel propeller, apparently pressed out in two pieces and then welded together at the entering and trailing edge. It looks a good sound job, but I would like to see it at work with a high-speed engine, and note the effect of centrifugal force before saying whether it will stand up to its work or not.

### The Sloan Bicurve.

The Sloan Bicurve appears again this year, though little has been heard of it since the last show. In its new form it resembles a gigantic Avro, and is fitted with a 100 h.p. rotary engine. The seating accommodation provides for a pilot, with two passengers side by side in front of him, but there is easily room in the enormous fuselage for three or more passengers. The plane arrangement has been considerably altered since last year, the upper plane having a downward curve all along—not merely a negative dihedral, while the lower plane has a slightly upward curve with a downward gull-wing bend at the tips, so there should be plenty of lift. The machine has been flying well of late at Issy, but was not ready for the military trials. The chassis seems rather light for the big engine it has to hold up in landing, but, doubtless, this is only due to the fact that the machine was got through in a hurry for the show.



The Sloan Bicurve, in its latest form, with 100 h.p. engine.

### The Goupy.

The Goupy, which is called a bi-monoplane, has been considerably improved since last year without making any startling departure from its original form. The planes are still staggered as before, but they are much farther apart, and probably avoid interference losses. The fuselage has been cased in all along, and the front portion is metal cased, the whole making a very fair streamline shape. The general construction is stronger, to stand up to a 100 h.p. engine, and in a general way it looks a really sound job, which deserves a bigger reputation than it has got, considering the reputations which very much worse machines have acquired.

### Lioré and Olivier.

Every show our friend Lioré turns up with a new partner. Last year it was Witzg-Lioré-Dutilleul, the year before it was Lioré and something else; however, he always has something out of the ordinary. The present machine is somehow to do with Jacques Balsan, the well-known aviator, and is, like most new machines, a compound of various others. The chassis is a two-wheel and two-skid affair, the wings are Blériot in plan, with a Nieuport-Phillips entry, the vertical fin and rudders are Antoinette, and the elevator is a plain flap, without a fixed surface. The original point is the fuselage, which is triangular in section, with the apex on top. Just why it should be so I was unable to discover, especially as the front part, with the pilot's seat, is of square section. Possibly the intention is that if the machine flies *cabré*, or tail down, the long, flat bottom will give it a lift. Also, ailerons are used on the wings. The machine has nothing particular to recommend it, except that it is fitted with a very fine R.E.P. engine.

### Marcel Besson.

Another machine which seems quite unnecessary. It is a kind of land-going Canard monoplane, i.e., it is without floats. The rudder is on the extreme nose, with the elevator well above the fuselage behind it. The pilot sits in the fuselage, far back. The single plane is three feet or so above and behind the pilot, and the wing-tips curl up and back, like a small edition of the Etchich or Albatros. The engine is on a level with the planes, so that it would fall with accuracy on the pilot in the case of a nose dive. In fact, it is not very unlike the Army Aircraft Factory's freak machine which killed Mr. Ridge, though perhaps not quite so badly designed.

### The Borel Monoplane.

The Borels show a couple of monoplanes, a single and a double seater, which differ little from the machine on which Védriens did not win the Circuit of Britain, the chief alteration being in the tail. Here a sporting effort has been made to combine the old Blériot ailerons with the new Blériot flaps, the result being a big elevator, pivoting behind a small fixed

lifting tail, à la Blériot, with bits projecting forward on each side of the tail. It ought to give immense control, and should cause considerable unnecessary head resistance. A steel torpedo body, similar to that shown more elaborately by Morane-Saulnier, is also on view.

### Coanda.

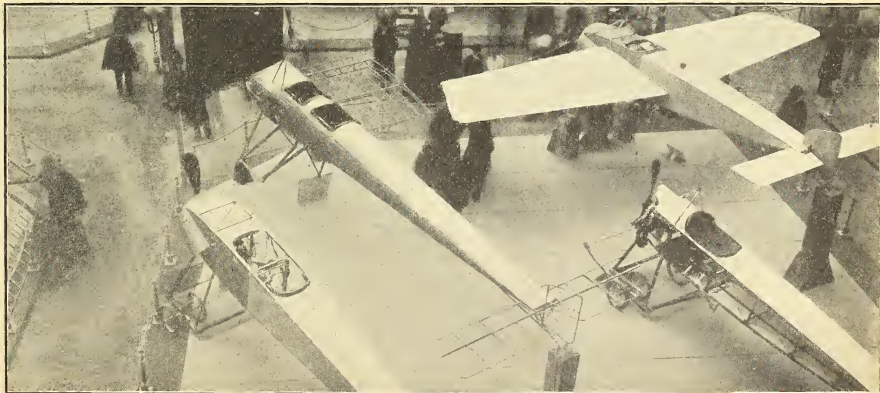
The latest Coanda machine is only shown as a model, but even in that form it is really quite fascinating, and M. Coanda, if he can get a commonplace business man to restrain his artistic temperament, may yet produce one of the finest of flying machines. His present model is of the Avro type, but with a very short lower plane, which is fixed, not to the fuselage, but to the coverings of the chassis struts, these struts being covered by a kind of petticoat on each side, like the Antoinette prepared for the French military trials. The effect is, naturally to lower the centre of pressure and of head resistance, a praiseworthy feature and an improvement on Bréguet design. The point, however, which attracts most attention is the power-plant, which is highly ingenious. Two Gnome engines are used, one on each side of the fuselage, revolving in opposite directions, and coupled by a clever arrangement of gearing, through which both engines drive one propeller, though in the event of one engine failing, the other continues the drive. Of course, the value of the design depends on the rotary engine retaining its present vogue; but so long as it does so, that form of drive has much to recommend it, as it completely annuls the noxious effect of gyroscopic action; and, in fact, utilises it to assist in lateral stabilising, though on account of this gyroscopic effect it would be necessary to strengthen the wing structure very considerably.

### The Kauffmann Monoplane.

This is a monoplane with a chassis somewhat resembling that on the Short machines, but more cumbersome. The wings are rather of the gull-wing type, being turned down and then swept up and back at the tips. A special feature is made of the fact that there is a stay-wire to every rib, the makers claiming a factor of safety of 25. An 80 h.p. Anzani engine is fitted, and there seems no reason why the machine should not fly very well, for it has a very high aspect ratio, a slight camber on the tail, and plenty of rudder and elevator area.

### The Caudron.

After a season of struggle, the Caudron people seem to be doing a genuine business, and certainly their "Populaire" type machine should sell well. It is practically the same as last year, but is now fitted with a 35 h.p. Y type Anzani engine, and the pilot's seat, now in a little nacelle, has been raised to the level of the engine, so the whole centre of gravity is higher than before. The same flexible rear edge to the planes is used, and the tail has a slight lift, the rear portion being flexed to act as an elevator.



A Plan view of the four Morane-Saulnier monoplanes. That in the right bottom corner is the 35 h.p. "school" machine.



### The Blériot Limousine.

Of course, all the daily papers will regard the Blériot Limousine, built for Baron Henri Deutsch de la Meurthe, as the finest thing in the show, and will probably neglect the beautiful little Blériot racer and the highly efficient 35 h.p. school machine, which are good enough to redeem even a large-sized joke like the Limousine. Candidly, I cannot take that machine seriously, and I know M. Blériot could easily build a much better machine for the same purpose. As a matter of fact, the machine strongly resembles the four-seater which Lemartin flew at Pau last year, and is open to the same objection, namely, that the 100 h.p. engine is right over the heads of the passengers, and behind them, so that in the event of a noseward landing the engine would probably enter the passenger compartment through the roof. The machine has, I understand, been flown by Legagneux twice for an hour at a time, but, so far as I can gather, it has not yet lifted its complement of passengers.

### The Savary Biplane.

The Savary has a very fine record, for it was the only machine in the French military trials which went through the Reims-Amiens and back test of 300 kms. carrying two passengers as well as the pilot, and that with a 70 h.p. Labor engine, the time being 4 hrs. 28 mins., so creating a passenger-carrying record for duration. The machine is in many ways original. In the first place, no rudder is used, there being two vertical flaps on each side which act as brakes on whichever side they are operated. There is a biplane tail, with a point towards the front, and this tail is hinged to act as an elevator. It is the only machine—bar the Short—which uses two tractors, and the beauty of the Savary system is that it has only one chain for both propellers, the chain passing under and over two idle pulleys which hold it up to the main pulley on the engine shaft.

### De Marcey-Moonen.

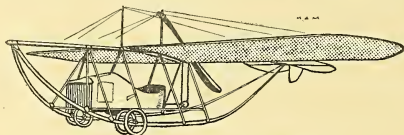
This is the machine illustrated a week or two back with the folding wings. Apparently the machine is quite an experiment, there being no warning arrangement, but the idea has possibilities, and it is to be hoped that MM. Murcay and Moonen are millionaires who can afford to carry their ideas to a conclusion.

### Clerget and Co.

show a magnificent Deperdussin with a 100 h.p. engine. This is the machine used by Delacour in the military trials, but for some reason or other, though a really fine flyer, with a really good engine and a good pilot, it did not distinguish itself.

### Ponche and Primard.

This firm shows a monoplane which might easily be mistaken for a de Pischoff gone wrong. It has the same car body, with a shaft running aft, and geared down by chain to a propeller behind the main planes overhead. The planes are made of aluminium, or some alloy thereof, and have strengthening



Ponche and Primard's Attempt.

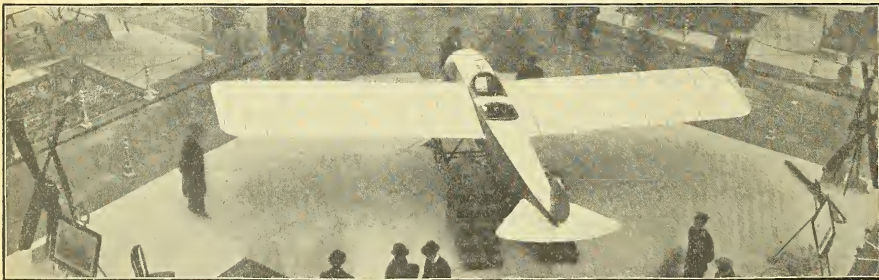
ribs of the same on top. The ribs are made to rather a nice camber, which, however, does not seem to serve any particular purpose, as there is no top surface to the planes. The machine might fly, but I would rather not see it make the attempt.

### De Poix et De Roig.

This is a monoplane, rather badly built, which looks as if it had been resuscitated from the remains of an ancient Hanriot. It is the sort of thing an amateur might built for his own amusement, but there seems no particular reason why anyone should be expected to buy it.

### W. Berthand

shows a big steel-built monoplane with a fuselage of diamond section and a chassis somewhat of the Antoinette type, but otherwise devoid of special interest. The machine has an Aviatik-Rossel engine, and has been flying for four months.



**THE BRITISH SUCCESS IN PARIS.**—The Bristol Monoplane, which was one of the sensations of the show, owing to its fine workmanship, and the way in which it is designed to give automatic stability without any fixed empennage.

### British Imports and Exports.

The Customs returns for 1910 and 1911 have recently been published, and give some idea of British progress during the year.

In the first ten months of 1910 the imports were valued at £46,500, roughly, and the exports at £11,800. These exports probably represent machines returning home after competitions, so that the net imports were about £35,000, or about 35 machines. In the corresponding months of 1911 the imports were £41,400, and the exports £15,600, showing £5,100 less imported and £3,800 more exported. During 1911 there were, of course, far fewer competition machines brought to this country and sent home again. These official figures show some signs of an awakening even before any support was obtained from our Government. Nevertheless, it seems that the figures cannot possibly be accurate, as they do not seem to tally

in any case with the machines one knows to have been bought and sold.

### Our Air Fleet Increases.

The aerial defence force of Great Britain has received, or, rather, is about to receive, two important additions. During the past fortnight or so the War Office has ordered two real flying machines, one a Bristol two-seater monoplane, of the most recent type, and the other a two-seater Deperdussin. When these are delivered they will bring our fleet of up-to-date air-craft to a total number of four, and we shall then be within reasonable distance of Roumanian air power. At this rate of progress we may, supposing other nations to be standing still, approach the air power of France or Germany in approximately twenty years' time.

## The Week's Work.

## Holiday Time.

Hardly any flying has been done during last week, owing to bad weather and to many aviators being in Paris at the show. At Brooklands on the 19th Fleming did a circuit, but weather too gusty for school work in morning. Later on Fleming up with Lieut. Smith (new pupil). Capt. Weeding made a straight flight; Warren made some long hops. Fleming then up with Meshan. Lane and Lieut. Smith then in pilot's seat in turn, with Fleming directing operations from passenger seat. Day's work brought to a close by Fleming taking Lieut. Smith for a high flight. Pizey has now returned, it is hoped, to start school work with a monoplane before long. Raynham also out on Avro-Viale, and Colossoplane doing straights. Hucks did some trials on Blackburn monoplane, just to tune up, but unfortunately damaged the chassis on landing. Kemp also did some straights on the Vickers. It is also reported that Lieut. Spencer Grey, R.N., the owner of the Blackburn, had the machine up at 1,000 ft. and flew for 20 minutes one day during the week.

At Fife, Messrs. Brereton, Hunt, and Scott have been doing rolling practice and short flights on school Blackburn.

## Boxing-Day at Huntingdon.

Huntingdon's first flying meeting terminated prematurely on Tuesday. Mr. Moorhouse had given a splendid exhibition on the Blériot, and was about to land, when he came down in the flooded portion of the aerodrome. The machine executed a somersault, throwing the aviator into the water. He was unhurt, but the monoplane was badly damaged. Mr. Gordon Bell also damaged the two-seater Radley and Moorhouse monoplane when alighting with a passenger.

## The New Distance Record.

The box-kite type of machine has now lost all but one of the really important records, for on December 24th, Gobé, who for a long time has been a school pilot of the Nieuport, seized the opportunity of a fairly fine day and put up a new non-stop record of 740 kilometres (about 446 miles), taking 5h. 16m. to cover the distance, against Fourny's old record of 720 kilometres in 11h.

Gobé started at 8.9 a.m., carrying 260 litres of petrol and 65 litres of oil, enough for 11 hours' flight, but was brought down by darkness at 4.25 p.m. The flight was made at Pau, and, owing to a gusty wind, Gobé lost a good deal of ground at the corners, consequently his official speed of 55 miles per hour, approximately, is a great deal less than his real speed, which is well over 60 miles per hour. As a matter of fact he must have covered close on 500 miles, and that without a stop. The whole performance is simply another proof of what can be done by a properly designed machine in the hands of a really capable pilot.

## Pateron in South Africa.

Compton Pateron was giving an exhibition of flying on a biplane at Greenpoint Track, Capetown, on Boxing Day, when at a height of 30 ft. or 40 ft., the elevator of his machine refused to work, and the biplane came down, pinning Pateron beneath it. He was subsequently taken to the hospital, where it was found that he had, fortunately, escaped serious injury.

## A Chance of Distinction.

Mr. Gordon Bell, until recently pilot of the Deperdussin at Brooklands, where he has made some excellent flights, when

at the Paris Show fixed up a conditional arrangement to fly the R.E.P. monoplane in France. By way of a test, to see how the machine suits him, arrangements are being made for him to fly with a passenger from Paris to Pau, via Bordeaux, his intention being to allow himself only one stop between Paris and Bordeaux. Knowing Mr. Bell's ability as a pilot, *THE AEROPLANE* confidently expects him to put up a very good performance. It should be noted that he is the first British pilot to be engaged to fly in France.

## Distinguished Visitors.

The Bristol stand at the Paris Show was largely patronised by distinguished visitors, all of whom were extremely interested in Britain's only representative. Officially appointed commissions of officers from Germany, Italy, Turkey, and nearly all the Continental nations, kept Mr. Harry DeLaCombe busy day after day. M. Henry Jullerot, the Bristol pilot, personally brought Prince Albert de Broglie, the Comte de Rochefort, and M. Dumas des Combes to see the machine, and among the most recent visitors the writer observed were Sir George and Lady Alexander, who were Christmassing in Paris.

## The Brooklands Bristol School.

The list of pupils who have taken their brevets, and those now undergoing instruction at the Bristol Brooklands School since September 1st, when Messrs. Pizey and Fleming took charge, is of considerable interest:—

Certificates granted: Major Benwell, I.A., Capt. Richie, I.A., Capt. Harrison, I.A., Captain Allen, Welch Regiment, Capt. Gordon, R.M.L.I., Lieut. Harford, R.F.A., Lieut. Wyness-Stuart, R.F.A., and Mr. Brereton.

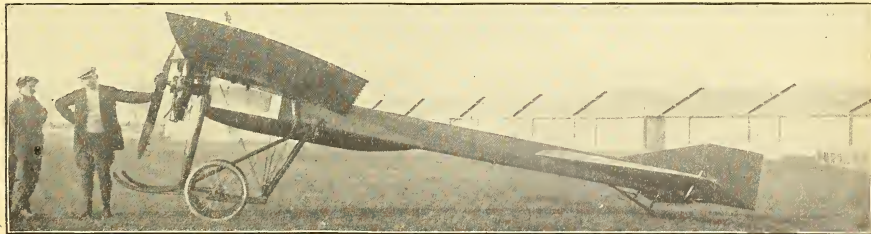
Pupils undergoing tuition at the moment: Capt. Weeding, Queen's Regiment, Capt. Raleigh, Essex Regiment, Lieut. Longcroft, Welch Regiment, Lieut. Stephen Smith, Special Reserve, Messrs. Nesham, Garne, Lane, and Warren.

Several of these pilots and pupils intend taking a monoplane course as soon as one arrives at Brooklands, and certainly no better instructors exist than Messrs. Pizey and Fleming, for not only are they both magnificent flyers, but they are always immensely popular with their pupils, and are besides very thorough in their running of the school, never missing a moment of weather when school work is possible, and always keeping their machines in perfect condition, both as to adjustment for flying and as to the safety of every part.

## Fatal Red-Tape—in France.

For some time past there has been considerable dissatisfaction among French army pilots at the disrepair of the sheds at Etampes. They are old sheds of the portable type, made of canvas and very leaky. Reports were constantly being sent in to the effect that the machines in these sheds were being deteriorated by the weather—in fact, it was said that if the officers-pilots had examined their machines before taking them out they would not have dared to fly them. No notice, however, was taken of the reports, and the officers, sooner than be accused of over-caution, have flown their machines constantly, the final result being the death of Lieut. Lantheaume, owing to the collapse of a machine rotted by wet.

On the Thursday before Christmas, however, some of the sheds were destroyed by wind, and it is hoped that those responsible will replace them with new sheds of reasonable construction. Our Air Battalion sheds are excellently built, but the French experience should be a useful warning.



Mr. D. Lawrence Santoni and the 50 h.p. Deperdussin on which he was flying recently at Reims. Note the large wheels now fitted, and the lift on the empennage.



## A Few Points about Aero-Hydroplanes.

By CLIFFORD FLEMING WILLIAMS.

I have been experimenting in a small way with hydro-aeroplanes, with more or less success, and it is to give voice to my own little tinpot deductions that I thus aspire in print.

There are one or two essential functions that hydro-aeroplane floats have got to perform: (a) Be capable of supporting the whole structure in the water at any angle of tilt either sideways or lengthways; (b) Offer the minimum of resistance to advance even in rough water; (c) Offer the minimum of head resistance when in the air; (d) And have a tendency to lift themselves from the water at all speeds.

I will deal with these functions in order.

I have found that it is necessary to have a very wide base. Water offers so little resistance to a float, that unless an ample margin is allowed, the aeroplane will capsize, either owing to a bad landing or a sideways gust synchronising with the lift to a wave. Therefore I advocate a base nearly twice as wide as the ordinary landing chassis. In the same way, support fore and aft of the centre of gravity must be equally extended, with the greater margin of buoyancy towards the line of progress.

I have found that three floats are best. Two in the bow, extending from just forward of the centre of gravity well out ahead of the engine and propeller (I am taking a non-lifting tail tractor type of aeroplane as a foundation). A third float takes the place of the tail slid.

Each of the front floats should be capable of supporting the entire weight of machine to ensure a sufficient margin of lift in rough water.

There is no reason why the floats should not be made long, narrow things, to offer least resistance when flying, provided that they fulfil a few essential conditions. They must first, and most importantly, be perfectly straight from the water line in the bow to the end of the stern. No boat-body curvature must be allowed. Any turn up at the stern tends to drag that part down, and the higher the speed the less inclination does it feel to leave the water. The sides, however, may be curved if desired. Nearly all the failures in aero-hydroplane work have been due to this tendency to "ease" the water off at departure.

I look upon my floats merely as a means of support when the aeroplane is at rest or at slow speeds, and for actual hydroplaning provide a widened flat extension flush with the bottom of the floats. In practice, even at moderate speeds, the whole of the floats are thus forced out of the water and the aeroplane skims along on these "float-planes," as I call them, until her flying speed is attained.

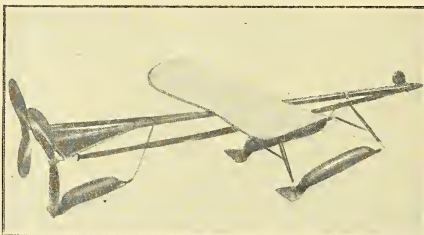
In the model shown in the illustration the action is as follows: The front floats with their float-planes are set at such an angle to the aeroplane that when the tail is above its flying level they are still clear of the water in the bow. The tail float is set at a slightly less angle.

As soon as she starts running, the float-planes lift her up so that the floats are clear and offering no resistance; the centre of thrust being so far above the centre of resistance helps to lift the tail up at a very early stage, and when her flying speed is nearly reached, the same factor tends to send it slightly above its flying angle, so that on the aeroplane attaining its lifting speed, the wind forces the tail down again, and that in its turn increases the angle of incidence of the float-planes to the water, which causes the aeroplane to jump clear directly.

In full-sized work it would be at the option of the pilot to perform these operations himself exactly as in an ordinary aeroplane.

The floats on the model shown are made simply by blowing out rubber tubing with a cycle pump, and they will remain inflated for months. There is no reason whatever why pneumatic floats should not be used on full-sized machines, provided that they were fastened down to a flat wooden floor. The side strains and stresses are negligible, it is the bottom that takes the knocks.

Provided the float-planes are properly constructed and of an area correctly proportionate to speed, no more power is required



The model in the air. Note the tails on the floats.

to get off the water than is required for land. In my models I only allow as much power as will make them fly when launched from the land, and that is ample to get them up off the water.

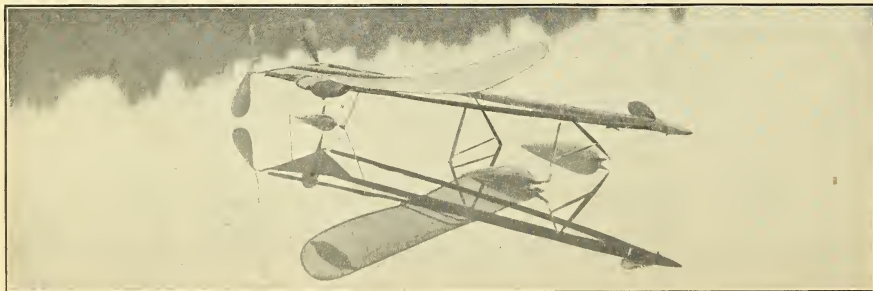
The thrust of this model is 3½ ounces, and she weighs 13 ounces, which is well under the one-third margin usually allowed. Another point is that she has a very small wing area in respect to her weight, and therefore has to attain a speed of over 25 miles an hour before she will lift, yet she rises as well and as quickly as some of my big speed models.

The condition of the water makes no difference, for if it is a dead calm she has to attain full speed before she rises, but if the water is rough, then it is blowing hard, and starting against the wind has to attain a proportionately less water speed. Through various causes, whatever the state of the water, the length of run hardly varies, averaging twelve to twenty feet.

I have confined myself to speaking of this model by way of illustration, and in no way insist that the lines of it are anything of a standard.

The great things to remember are, an absolutely flat water-line section to the float, which need not bear any direct relation to the actual running part of the hydroplane, and a large margin of floating stability especially forward of the centre of gravity.

There are hundreds of other points to be considered, and difficulties that crop up, which I should like to touch on at some future date.



The Fleming Williams hydro-aeroplane model at rest on the water. The position of the floats should be noted.

## "The Plan Form of an Aerofoil."

By P. K. TURNER.

Although in detail there are various different shapes of wing plan form in use at the moment, I have been unable to find out from designers that they had any particular idea in adopting their plan forms, much less what that idea was. The subject is full of difficulty, since the whole essence of a particular plan form is that it should make use to the fullest extent of every particle of air which it can influence, and that it should exert its influence on as many particles as possible.

This would be a comparatively simple matter if one only knew what were the effects produced on air by putting that air under the influence of a solid body in its vicinity. Endless experiments have been made on the subject, but we are still almost entirely in ignorance—chiefly owing to the fact that while the various experimenters have shown immense ingenuity in discovering ways of testing these matters, none of them have taken for their experiments a coherent series of solid bodies to observe.

The only course, then, open to an inquirer at present is to conjure up in his imagination a picture of a solid body, mentally envisage the surrounding air, and think what would be likely to happen to it, treating it on common-sense lines.

One very important consideration regarding plan form is that a single wing is simply a form of girder turned upside down, supported at one end (i.e., at the fuselage) and at a point near the other end, or perhaps at various points, if there are several tie wires, and loaded with a distributed load by the air-pressure acting upwards. The mere fact that the load presses upwards while the supports pull downwards has no influence at all on the construction.

Now in calculating the strength of a girder, two qualities are involved, the actual load and the distance from the support of the centre of pressure of that load. If, for example, it is desired to build a wing absolutely without tie wires, the wing spar takes the form of a cantilever fixed at one end, i.e., at the body, and loaded throughout its length. Supposing that every square foot of the wing supports a given load, it is obvious that if the wing is triangular in plan form, the ribs near the root will each be lifting more than the ribs near the tip, so that the centre of pressure of the load will be near the root.

If, on the other hand, the wing is rectangular in form, each rib will carry an equal weight, and the centre of pressure will be half-way along the spar. Therefore, for constructional purposes, the triangular wing will obviously be stronger for the same weight. By the same line of reasoning, it is apparent that of two wings of equal area, the spar may be made lighter in that wing which has the lower aspect ratio, if they are both of the same shape. This follows from the fact that, while the load on each is equal, the distance of the centre of pressure from the root is greater in that wing which is longer, that is, which has the higher aspect ratio.

On the other hand, the low aspect ratio wing will not be nearly so efficient as a lifter as the high aspect wing, and we arrive, as usual, at a point for compromise. As a matter of fact, current practice usually employs an aspect ratio of about 4 or 5 to 1, as it is found that the constructional difficulties and greatness of span of higher aspect ratio machines outweigh their advantages.

When the wing is otherwise than rectangular in shape, the usual method of arriving at the aspect ratio is to divide the span by the average chord. This, on consideration, hardly appears correct, for the value of aspect ratio depends in reality on the amount of end losses, and if the planes run to a fine point at the tips, the end losses are obviously practically nil, so that the aspect ratio is enormously higher than it appears by simple calculation of chord and span. Thus it seems possible that a machine might be built with pointed wings, which, although of the same span and same area as one with rectangular wings, and hence possessing an apparent aspect ratio (reckoned on the average chord) the same as the other, might well be more efficient, since its real aspect ratio is greater than it appears.

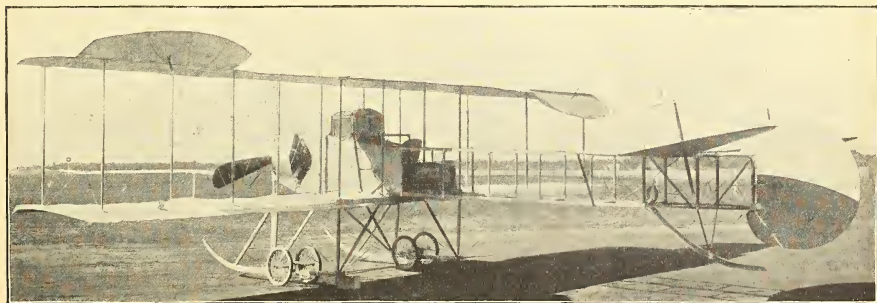
An example of this, though only in model practice, is the Ding-Sayers machine, whose wings are in the form of two triangles base to base. This has an apparent aspect ratio much less than that of similar machines with rectangular planes, but has nevertheless proved itself exceptionally efficient, and it is a pity Mr. Sayers has been unable to test his invention on a full-sized machine.

Another line of reasoning is provided by the consideration of the probable lines of air streams around the planes.

Assuming that the planes have a dihedral angle and probably are slightly tapered, and possibly have what is known as a "wash-out," it is obvious that a stream of air entering the influence of the plane at the front edge is deflected downwards against its will. If this stream is on the lower side of the plane, a little thought will show that there is also a force tending to move it outwards. This is owing to the fact that the trailing edge is higher as one gets further from the body. It is true that the leading edge is also higher, but it must be remembered that we are dealing with a stream of air entering at one particular point of the leading edge. If this is deflected outwards it will not be deflected so far downwards, so that the air stream will actually take up a position such that the work done in pushing it outwards balances that saved in pushing it downwards to a lesser extent.

It is desirable that the air, as far as possible, should enter and leave the plane perpendicular to its edges, so that one would at first sight feel inclined to adopt a curved trailing edge; but one must not lose sight of the fact that the air above the plane has quite as much influence on lift as that below it, and on considering the point one can see that the air above the plane will have an inward tending flow, so that a shape of trailing edge suitable for the air above the plane is not the best for that below. In these circumstances it seems reasonable to adopt a straight trailing edge as being the cheapest and easiest to make. Any deviation from this line would be more efficient for one body of air but less efficient for the other, and it involves the tapering of the wing, which means expense.

With regard to the shape of the tips, we have, as in the case of the trailing edge, two conflicting sets of circumstances: the air beneath the wing is in compression, and will try to leak out; that above it is below normal, and there will be an inward leakage. To combat the first leakage, one would naturally make the trailing edge longer than the front edge, so as to expose the tip to a pressure acting against the leakage.



Rear view of Mr. J. V. Martin's biplane illustrated last week. The compensating action of the ailerons is well shown.



pressure. Unfortunately, this is the worst shape when one considers the air above the plane. To take concrete instances, the Blériot wing-tip is excellent in its dealings with the upper air, while the Morane is apparently designed solely to look after the under layers. As in the case of the trailing edge, the simplest thing is to cut the tip off square, unless the wing runs to a point.

The point lightly touched on above, viz., expense, must not be lost sight of. It must be remembered that while the spars are the heaviest part of the wing, the ribs are the most expensive, and, moreover, if the ribs are all alike the cost is only about one-third of that of wings where each rib is different. Also it is much easier to make a large quantity of ribs all exactly alike and true to form than it is to make a series of ribs each true to a different form.

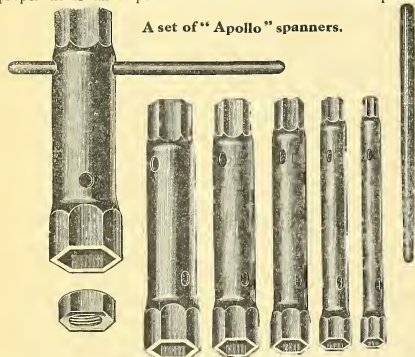
A point frequently overlooked in the design of wing spars is that they are all elementary forms of girder and cantilever. In some cases, it is true, they also have to do the work of compression struts, but this side of the question only becomes of real importance in cases where the wing tie wires are at a small angle with the horizontal and so cause a heavy inward pull. In most cases the pull from this cause is amply met by a girder strong enough to take the distributed lift and drift.

A girder such as is formed by that part of the spar between two tie wires, or between a tie wire and the root of the wing, is a girder supported at the ends, and with a distributed load. Such a girder, to be efficient, must be of greatest section in the middle, and should taper towards the ends. Similarly, the spar overhanging the last tie wire and supporting the tip of the wing forms a cantilever, and should be strongest at its point of support.

The depth of the spar is governed by the desired thickness

#### Useful Box Spanners.

Among the many useful accessories now on the market some of the most useful are the sets of tubular box spanners brought out by Acdes and Pollock, Ltd., of Oldbury, near Birmingham. These spanners, which are known as the "Apollo," are made from the firm's own cold-drawn steel tube, and will be found to be of extra strength, with the ends well and truly shaped, so as to fit comfortably the nuts for which they are intended. It will easily be realised that a proper fit is an important factor in the life of the spanner



A set of "Apollo" spanners.

and of the nuts themselves. The set illustrated here retails at 7s. 6d., but smaller sizes, quite suitable for motor-cycle work and small work on aeroplanes, run as low as 1s. 6d. a set. The firm are prepared to vary the combinations of sizes (within reasonable limits) so as to give exactly those sizes which any customer may require.

Having known the firm's work for many years, the writer can vouch for the quality and finish of the goods. The range of sizes is so large that spanners for practically any work can be obtained from stock.

#### The Educated Engineer.

During the discussion which followed a lecture upon Electromagnetism, given at Birmingham on Dec. 14th, a member said that as the lecturer had told them the atmosphere was very rich in magnetic energy, he would like to ask the lecturer if he thought this energy could be successfully applied to flying machines. In reply, Mr. Berry said he had no hesitation in

saying yes, and if the ribs are, as suggested above, to be all alike, the thickness of the spar must be constant. In this case, the only way to make a solid spar of equal strength throughout is to taper it off in the width; but since there is a certain load on the spar, due to the drift of the plane, this method is not really sound, as the same taper does not produce the same variation of strength as regards lift and drift.

The most efficient spar possible for a compound load in two directions is a box spar of which the top and bottom booms are calculated and tapered to take the lift, while the two sides similarly take the drift. This, however, is rather expensive to make. The next best type of spar, and by far the soundest from all points of view, is an I spar, the thickness of whose web and flanges is calculated to take both strains combined.

Summing up, then, it would seem that this cursory examination of the subject (which, as a matter of fact, is founded on two years' thought of my own, as well as much that has been unscrupulously collated from others) would indicate that the best plan form for a machine where cheapness and ease of construction are considerations is a simple rectangular plane with I spars, whereas if efficiency is desired above everything else, a plane of double triangular or other form with pointed tips would probably meet the case really better.

I have throughout avoided the question of warping power, since, in the biplane type at any rate, one can always use "balancing planes" and so avoid the whole question.

If, however, warping power must be considered, the rectangular plane is obviously better than the tapered; and, purely for warping purposes, the best of all would be the plane running to a point at the root and of infinite chord at the tips, where the warp has most effect. This plane, unfortunately, is rather difficult to design.

saying yes, for he certainly thought something in this direction would be done in the near future. Flying machine makers and aviators generally appear to have got into one common rut with regard to design. We read of aviators doing successful flights, also of many failures which end with either loss of life or serious injury, and yet one does not hear of any great modification being made with regard to design for safety. Some may have a longer propeller blade, or the elevator at a slightly different angle to others, but it only remained for the one prime mover to fail and the result was a complete smash-up. What was wanted was some wise philosopher to come along and show how to utilise this valuable energy, something after the lines of wireless telegraphy, with suitable electrical machines which, he (the lecturer) said, should be in duplicate, and then to cross the Atlantic Ocean would be quite a detail.

It seems lamentable that a lecturer, belonging presumably to the honourable profession of engineering, should be capable of words showing such an extraordinary ignorance of a branch of his profession—an ignorance even greater than that of the layman-in-the-street, who draws from the half-penny dailies such information as he can. It is all the more extraordinary in that the lecture was given in a large city possessing an enterprising aero club of its own.

If would-be students of aviation receive—from sources which seem to them authoritative—misinformation of this kind, what wonder is it that the industry is slack in England, and is in need of Government encouragement?

#### FINIS, 1911.

With this issue ends the first volume of THE AEROPLANE. The paper was started with the idea of supplying the need for a newspaper which not only supplies news, but has definite views and a policy of its own, unhampered by any association, society, or club, and untrammelled by association with any other trade or sport than that of aviation. That idea has been the making of the paper, which can, with pride, and without boasting, claim to have acquired considerable influence in spite of its youth. At times it has been the paper's duty to hit hard in a good cause, and at such times the editing has been done without gloves, but that is better than futile wrangling.

In such matters as the killing of the box-kite, the attacks on the inefficiency of the Air Battalion, and the Aerial Post force, THE AEROPLANE has made enemies, and it is proud of them, but it also seems to have made a considerable number of friends.

To all such THE AEROPLANE wishes a Happy and Prosperous New Year.

The greatest appreciation such friends can show for the paper is to criticise its faults, and as it is the editor's hope to make the paper more acceptable than ever in the next volume, he begs his readers for their advice as to the future. The smallest criticisms will be gratefully received.

## Correspondence.

**The Editor of THE AEROPLANE is not answerable for the opinions of his correspondents. All communications intended for these columns must be accompanied by the sender's name and address, not necessarily for publication. Letters should be addressed THE AEROPLANE, 166, Piccadilly, W.**

## A Correction.

Sir,—My attention has been called to a paragraph in your issue of the 7th inst., in which you attack the Aerial League and also myself, in regard to its action in the matter of the competition for military aeroplanes.

As far as I am concerned, I shall not enter into any personal argument, but let me contradict the statement you make about my being a member of Parliament, which is as inaccurate as the bulk of your other remarks; I have not been in Parliament since November, 1909. You are also incorrect in stating that the League only appointed Colonel Seely after the matter had been taken up by the Royal Aero Club.

The Aerial League may have faults, but they were certainly first to take action in this matter, and, as a result, obtained a definite public undertaking from the Government that, in addition to the open prize for the best military aeroplane fulfilling their requirements, substantial prizes would be offered solely for British-made machines.

I may add that the Aerial League still believe that it is most important for the nation to have the best aeroplanes for national defence, but they have to take credit in getting £5,000 in prizes for the special encouragement of British manufacturers. As the matter now stands, out of £21,000 the British must win at least £5,000, even if they fail to win the other £6,000. Is this nothing to have obtained?

I ask for the judgment of the public, and have no fear of what that judgment will be. I may add for your information that the names of the deputation appeared not only in the *Times* but many other papers.

B. S. STRAUS.

[The Editor apologises for accusing Mr. Straus of being a member of Parliament. So far as the Aerial League is concerned, it may be well to point out that THE AEROPLANE announced on November 30th that a prize would be given for British constructors. That information was obtained ten days earlier, but was not published from motives of policy, so evidently the decision to give a prize for British makers was made some time before the Aerial League "deputation" obtruded itself, and therefore the said deputation can scarcely claim to have influenced anything.—Ed.]

## Concerning Dirigibles.

Sir:—In your account in this week's AEROPLANE of my small dirigible proposition, you have quoted me as saying the speed would be 15-20 m.p.h. This, of course, places the little machine in the category of the "amusing fair weather craft," whereas it is primarily intended as a distinct advance on such.

The balloon with which I intend to experiment is 11 ft. in diameter and 62 ft. long, and taking the figures for resistance as found by my own experience, an engine giving 12 h.p. would mean a speed of 35 m.p.h., and I intend to use a 15 h.p., as a lift of 100 lbs., to carry engine and propellers, has to be obtained at full speed either:—

- (a) By letting the under surface of the envelope produce this by a slight angle of incidence to be found in practice (as there are no reliable data on this), or
- (b) By fitting two planes of about 17 sq. ft. one fore and one aft side of C.G. (and C. Buoyancy), carrying 50 lbs. each, and inter-controllable by the pilot to obtain the correct gliding descent with the engine stopped.

With the engine running, a perpendicular descent could be made by propellers revolving, in lifting position, at the necessary revolutions to let machine drop slowly, or a perpendicular drop made with engine stopped, and the downward weight of machine converted into glide at the last moment for landing. This is a safe method, as you must remember the lateral stability of the whole system is always assured by the part lift of the balloon.

To obtain a speed of 40 m.p.h. with this system would mean absorbing about 22 h.p., but there is no reason why this should not be obtained at a little over 100 lbs. weight for the engine and propellers, with modern improvements in engine construc-

tion. You will admit that a machine with a forward speed of 35-40 m.p.h., and the power to rise and fall in the vertical plane, which means landing and getting off any type of ground, fills an important sphere which cannot be touched by the accepted type of aeroplane of to-day.

It is interesting to note that in the "City of Cardiff," with her present small power, the rate of rise with the vertical lift of propellers is over 600 ft. per minute.

Birmingham.

E. T. WILLOWS.

[In describing the machine, the writer had in view simply the small pleasure craft mentioned by Mr. Willows. As for the bigger machine, one may accept Mr. Willows' statement without question, as his experience of dirigibles is without equal in this country.—Ed.]

## A Question of Stability.

SIR,—I should like to ask the opinion of your readers on the following questions concerning the inverted dihedral angle:—

Firstly: What experimental research led up to the establishment of the opinion that the inverted dihedral angle gives an unstable effect to any aeroplane to which it is applied?

Secondly: If, in the ordinary way, an inverted dihedral angle produces instability, why is it that the Cody's roto machine, the "Flying Cathedral" (the main planes and elevators of which were given a slight inverted dihedral) was such a stable machine?

Thirdly: Can anyone tell me the position of centre of gravity on the 1907, 1908, and 1909 K.E.P. monoplanes in relation to the centre of pressure of the main planes?

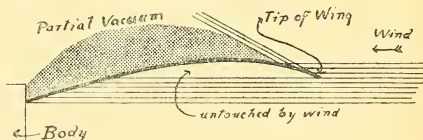
Hastings.

W. WINSOR.

## Stability.

Sir,—I enclose a rough sketch of a system of automatic stability.

I am not out to seek notoriety in any form, but to do my humble best for the aeroplane industry. I do not propose to argue whether automatic stability is desirable or not, but since Colonel Seely informed a deputation recently that automatic stability was desirable for national defence, I consider it my duty as an Englishman, or rather a Scotchman, to "tear my hair" endeavouring to obtain this advantage for the British Empire.



The principle is this: When a gust of wind hits the outer extremity of the wing it is deflected at such an angle as to cause a partial vacuum in the inner extremity of the wing. At the same time the drooping wing tip from which the gust is deflected guards the greater portion of the surface from being affected by the gust. This system also has the advantages of the dihedral angle without its disadvantages. Modifications and improvements, such as drooping the wing more, or a smaller and more gradual curve of the wing, are possible, but they must always rely on this fundamental principle. In short, it is a wing cambered longitudinally similar to that now used for the chord in the present machines.

It is the advent of steel tube construction which will make the construction of such a wing possible. Wood may be light for its strength, but now that we have got over the fear of overweight, steel tubing will come into use by reason of its strength, durability, and workable qualities.

In conclusion let me say how much I have enjoyed THE AEROPLANE in the past, and how, week after week, I look forward anxiously to the next issue.

London, S.W.

J. FURLEY SMITH.

[Mr. Furley's Smith's theory, though ingenious, would scarcely work in practice, for, in the first place, a gust does not catch a wing end on as he seems to imagine, for the machine is travelling forward at a velocity which is presumably greater than that of the wind itself, and consequently each particle of air strikes the front edge of the plane with a certain amount of sideways momentum of its own, though the actual tilt of the wing is probably given owing to the difference in velocity between the gust on one side and the absence of gust



on the other rather than by the difference in the direction of the wind itself. In any ordinary wing the amount of leakage at the tip would probably more than counteract any actual effect of the wind blowing on to the tip of the wing. Apart from that, however, what Mr. Smith has produced is a very efficiently cambered wing—in apteroid aspect—so that if his theory did work he would actually get more sideways lift out of a plane of this shape than he would out of an ordinary plane which was straight from butt to tip. In fact, the difference would be just the difference between a flat plane and a cambered one.—Ed.]

#### Soaring Flight.

Sir,—“Soaring Flight” is a subject in which I am intensely interested. One of my past theories upon this subject used to be that of a plane or planes, the underside of which was kept at a good heat by steam or hot air, etc., from the inside. Now the idea was, the cold air striking upon this surface was suddenly expanded by the heat, and the sudden expansion thereby causing increased lift. The steam used was to be blown through jets from the leading edge, across the top side of plane; by so doing it helped to produce a partial vacuum, and so increasing the lift. I don't know how it would have acted.

Lately I have been studying bird flight in regard to soaring. I have a very good chance about here of studying the same. Now, I always notice that the air is most fully soarable about here just before a thunderstorm, and I may add that at this time there cannot be any upward currents of air, for wherever you go you cannot find a breath of air moving in any direction. Even on the tops of steep hills you find the air just the same. Now, my theory is as follows: It is well known that two distinct objects equally charged with electricity repel each other with great force, and two bodies unequally charged attract each other powerfully. Just before a thunderstorm the air is heavily charged with the current.

Now, if by some means the bird is able to charge the underside of its wings equal to that of the air, a very powerful repelling force will be created, quite able to support it even in calm air. Now, all creatures have a certain amount of electric fluid in their bodies, so that is quite a possible fact that it may be able to soar by repelling, or throwing the air downwards from the wing, by this force.

As far as my experiments have been carried, I think this is the case. Of course, the only part of wing charged would be the under part. It may even be that the air might equalise the power by meeting the under-side of wing, and thereby giving up so much current until they are equalised, and then soaring would commence. This would solve the problem of the air being sometimes soarable and sometimes not, especially in hot countries, where most soaring birds are to be found.

Now, from this I think a machine could be built to do the same. Only the air directly in front of wing would have to be electrified by means of machine on aeroplane or glider. (As you know, the air can be electrified to certain distances round an object.) This air being less electrified would be attracted to the under side of wing (and also would have an attraction on wing), and these would be equalised in contact with charged wing, and cause this powerful repelling force, or the methods of proceeding could be varied. Of course, such a machine would possibly start from ground without assistance, and might be made to hover if so required.

Apply.

J. J. BLAND.

[Mr. Bland's theories are extremely ingenious, but they seem to admit of a very simple explanation. So far as the “soarability” of air before a thunderstorm is concerned, it seems quite possible that it may be accounted for by the fact that thunderstorms generally occur in hot weather, and the approach of the storm, with its heavy blanket of cloud, means that the air in the immediate vicinity of the storm, and especially under the cloud, is very cold, while the air in front of it is hot. Consequently, as the hot air in front escapes, the cold air in the vicinity of the storm supplies its place, and an upward current is generated; or, of course, it may be that the storm is attracted towards a certain area by the fact that the upward currents caused by the heat leaves a region of decreased pressure, and the storm with its mass of cold and heavy air is sucked along to replace the air which has escaped. The mere fact that there does not seem to be any wind blowing until the storm actually arrives may be accounted for by the fact that the air is travelling vertically instead of horizontally.

Soaring flight in hot countries is, of course, accounted for in exactly the same way, namely, that wherever there is an exposed, rocky, or sandy area there is an upward current which is supplied with air from the shaded or vegetated and cooler areas round about. A bird knows by instinct when he strikes

an upward current, and all he has to do is to glide downwards at his best gliding angle while the current drives him upwards.

This fact, as has already been explained in THE AEROPLANE, was the basis of the recent gliding experiments carried out by the Bros. Wright and Mr. Ogilvie in America, and the upward whirling currents immediately preceding a thunder-storm were no doubt what caused the complete capsizing of Mr. Reynolds' machine last summer when he had his marvellous escape after coming down a thousand feet or so with the machine upside down.—Ed.]

#### The Royal Aero Club.

The following new members were elected:—Lieut. Spencer D. Grey, R.N., Lieut. C. G. W. Head, R.N., and Engineer Commander Gilbert Howard Page, R.N.

The Gordon-Bennett Aviation Cup having been won by the Aero Club of America, the race for 1912 will take place in the United States. The exact time and place will be announced later.

The Fédération Aéronautique Internationale has decided that the course is to be a closed circuit with a minimum of 5 kilometres, and the total distance to be flown is 200 kilometres.

The committee of the Royal Aero Club will select the three competitors to represent the British Empire, and intending candidates are requested to notify the secretary on or before February 15th, 1912, of their willingness to compete, if chosen. Applications must be accompanied by a cheque for £20, the entry fee, which amount will be returned should the entrant not be selected.

Mr. C. G. Grey, editor of THE AEROPLANE, has kindly presented the club with a set of lantern slides dealing with all the latest types of machines.—HAROLD E. PERRIN (Secretary).

#### Material for Models.

THE AEROPLANE has recently had the pleasure of examining a sample outfit of materials for building the Mann monoplane, as sold by Messrs. Willis Bros., of Hastings. The set is very complete, comprising the following materials: Two pieces of square birch for frame longitudinals, a length of streamline wood for cross-struts, a piece of veneer for elevator, two blanks for propellers, one wire frame for main plane, and fabric to cover it, eight yards of rubber, strainers and fine wire for bracing, collars and stiff wire for propeller-shafts and brass-bearing brackets for same, nails and aluminium for assembling, a blue print, and instructions for flying. It certainly appears to be very good value for the money.

#### CLUB NOTES.

*N.B.—Club Notes must be posted to 166, Piccadilly, to arrive not later than first post Monday morning.*

**Birmingham Aero Club.**—Probable that ground at Billesley Farm will become more important, as one of club members may be putting up workshop and hangar large enough for more than one aeroplane. This member has spent several weeks at Hendon to obtain knowledge, and will be coming to Birmingham to start company here. Saturday last W. Lunn gave an improved ride from model. Jones also doing good flights with his W. H. C. monoplane. Next day, Haddon Wood doing improved flights with modified model, as also E. Trykle's glider. General meeting, Wednesday next at 8 p.m., 9, Belgrave Road.

**Blackheath Aero Club.**—Saturday last, at Kidbrooke, many members tuning up in view of competitions, but these postponed owing to wet. Fair amount of flying at Blackheath on Tuesday, 19th, by Brown, Grey, Whitworth, Egelsstaff, Ford, and Waghorn testing. Members please forward particulars of models for exhibition, on January 4th, at the Central Hall, Peckham, to the Hon. Sec., A. B. WARR, 136, E. Finchley Road, Finchley, S.E.

**The South Essex Gliding Club.**—In view of inquiries received, secretary points out that for present membership of club is complete. On completion of club's glider in February next, general meeting will be held at the Alexandra Hotel, Stratford, when prospective members will be cordially invited. Exact date of meeting will be announced later.—HERBERT H. WEALEY, Hon. Sec.

**Brighton and District Model Aero Club.**—Saturday ideal, and some good work done. Hewey with “Mann” model flew over 250 yards, though flights were mostly circles. Orford and Knowles did long, straight flights. A. C. von Wichmann's old certificate for flying over 200 yards in spite of tendency to circle. Open point-to-point competition, on January 13th, at Shoreham, and good sport is hoped for. Flying at Shoreham, December 30th. Prospective competitors should apply to Hon. Sec., A. C. VON WICHMANN, Kinsbury, Kinsbury, Ave.

#### When You Fly

Let your repair outfit include the means of repairing yourself. Carry a

new **“TABLOID” BRAND FIRST-AID**

As carried by all the leading aviators

A serviceable pocket outfit, 2/6. All Chemists

BURROUGHS WELLCOME & CO., LTD., LONDON



**MISCELLANEOUS ADVERTISEMENTS**

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY, to ensure insertion.

For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE.

Special PREPAID Rate—18 words **1/6**; Situations Wanted **ONLY**—18 words **1/-**. 1d. per word after.

**PATENTS.**

**PATENTS.** Instructive leaflet free, from Stanley, Popplewell and Co., Chartered Patent Agents, 38, Chancery Lane, London, W.C.

TO INVENTORS AND OTHERS INTERESTED IN PATENTS. THE AEROPLANE will be pleased to consider inquiries relating to Patents, and to recommend reliable Patent Agents if desired. All communications should be addressed to THE AEROPLANE, 166, Piccadilly, W., and should be marked in the left hand corner of the envelope "Patent."

**MACHINES.**

**£600** COMPLETE. For the easiest machine to handle, the most stable, the most compact, you must see the Avro Biplane. For passenger and cross country. A. V. ROE AND CO., Brownsfield Mills, Manchester.

**WANTED.**—Farman or similar Biplane, with or without engine, in good condition and reasonable. CHANTER AND CO., Brighton Aerodrome, Shoreham.

**PROPELLERS.**

**PROPELLERS:**—Avro propellers of proven efficiency. "Pashley fitted Avro propeller, suddenly found troubles disappeared, and flew five good circuits." [AEROPLANE.] Equally good results if fitted to your machine. A. V. ROE AND CO., Brownsfield Mills, Manchester.

**CHAUVIERE'S FAMOUS "INTEGRAL" PROPELLERS.** hold all Records, used by all leading Aviators. The Best. Sole British Agents, GEO. W. GOODCHILD AND PARTNER, 30-32, Farringdon Road, London, E.C. Telegrams: Whizzing, London. Telephone: 1707 Holborn.

"**B** LACKBURN" propellers supplied, and successfully used on all the leading motors. THE BLACKBURN AEROPLANE CO., Leeds.

**FINANCIAL.**

**THE IDEAL MILITARY MONOPLANE.**—Well known firm require further capital for completion of this machine, which has ALL the essential details required to make it a sure success in the forthcoming trials. "MILITARY," c/o THE AEROPLANE, 166, Piccadilly, W.

**EMPLOYMENT.**

**AVIATION.** The British and Colonial Aeroplane Co., Limited, builders of the "BRISTOL" AEROPLANES, are now prepared to take a few selected premium pupils in their Works for a thorough course in Aeroplane construction. Apply, stating age, educational qualifications, etc., to THE SECRETARY, Filton House, Bristol.

**TUITION.**

**A.S.L.** SCHOOL OF AERONAUTICS. Tuition in all branches of aeronautical engineering; remunerative scholarships to pupils attaining certain standard of efficiency.

**A.S.L.** SCHOOL OF FLYING. Tuition on biplanes and monoplanes; numerous machines; expert instructors; every facility. AERONAUTICAL SYNDICATE, LTD., Flying Ground, West Hendon.

**£25** TUITION until brevet is won on Blériot and Chantier monoplanes; or £65 including all breakages. CHANTER, Brighton Aerodrome.

**£50** TUITION in flying till certificate is won. Three-quarters of the prizes at Weybridge during 1911 won by AVRO pupils. THE AVRO SCHOOL for most thorough and all-round instruction. A. V. ROE AND CO., Brownsfield Mills, Manchester

**£75** TUITION for Aviator's certificate on both Deperdussin and Blériot Monoplanes. Insurance against breakage, and third party risk. **£15** RETURNED to pupil in the event of no breakage. Perfect equipment. Personal instruction. Write for agreement form. W. H. EWEN, Hendon Aerodrome, London, N

**H** ERBERT SPENCER Flying School, Brooklands Aerodrome, Weybridge. Tuition and practical constructional work from £40. Passenger flights from £2 2s.

**B** ARRHEAD FLYING SCHOOL. Finest Aerodrome in Scotland. Tuition by certificated pilot on Blériot and Caledonia Monoplanes and Biplanes. Passenger flights. SCOTTISH AVIATION CO., 185, Hope Street, Glasgow, or Barrhead.

**D** EPERDUSSIN Aviation School at Brooklands; thorough instruction in flying by competent staff; thorough tuition £75, including breakages and third party insurance. Apply to THE BRITISH DEPERDUSSIN AEROPLANE SYNDICATE, LTD., 30, Regent Street, Piccadilly Circus, S.W., or at Brooklands.

**F** ILEY AERODROME. Tuition on Blackburn or Blériot Monoplane. For particulars apply BLACKBURN AEROPLANE CO., Leeds.

**MISCELLANEOUS.**

**H** ANGARS TO LET on the best flying ground in England for 3, 6, or 12 months. For further particulars apply Manager, Portholm, Huntingdon.

**E** TRANGERS, qui aimez la langue française et l'Aviation abonnez-vous à

**LA FEUILLE SPORTIVE**  
2 fr. par an, France; 3 fr. par an, Etranger. Directeur: M. Gache, Professeur du Lycée Carnot, 5, Rue Salneuve, Paris.

**FLYING MODELS.**

**T** HE ideal New Year's present is a "Mann" Monoplane, which will outlast a dozen so-called "cheap" machines. This wonderful record-breaker can again be supplied at 15/- post free by return of post, but after Dec 31 the price will be considerably increased. Don't get left behind, order now! To advertise the sets of parts (5/6) for building a "Mann" (3 mile type), we are giving a 2 oz. bottle of "Willis" lubricant to every purchaser, and we are making the same offer to every buyer of a "Mann" geared winder (5/6), a pair of "Mann" propellers (3/6), 2 dozen yards of our 1/2 inch (3/-), or 3 dozen yards of our 1/4 inch rubber (2/9). "Willis" lubricant can also be obtained separately at 9d. per 2 oz. and 1/3 per 4 oz. bottle. Everything post free in United Kingdom, carriage forward abroad. Place your orders early to avoid the rush with WILLIS BROS., 14 Wellington Square Hastings.

**M** ODEL PROPELLERS—Genuine CHAUVIERE—8in., 10in., and 12in. diameter, always in stock. Geo. W. Goodchild and Partner, 30-32, Farringdon Road, London, E.C.

**N** EW Catalogue of Model Aeroplanes. Accessories now ready. J. BORN AND CO., LTD., 97, New Oxford Street, London, W.C.



# THE AEROPLANE

Edited by CHAS. G. GREY. ("Aero-Amateur")

1<sup>2</sup>  
WEEKLY

Vol. I.]

FRIDAY, DECEMBER 29th, 1911

No. 30

The Superiority of the ALL-BRITISH

## GREEN AERO ENGINE

over the foreign-made rotary type has been more than once proved to the hilt. Remember that out of the 27 foreign rotary engines entered for the £10,000 Circuit of Britain Race only 3 completed. ONE Green Engine entered and ONE Green finished with all sealed parts intact. And besides the Green is more silent, less complicated, and much more economical.

Write for particulars NOW—  
before it slips your memory.

**THE GREEN ENGINE CO.**

(Sole Licences under The Green's  
Motor Patent Syndicate, Limited).

55, BERNERS STREET, LONDON, W.

Makers for the Patentes: The Aster Engineering Co., Limited.

F.H.G.

# 'AVRO'



Every part, every nut, every bolt we supply is absolutely reliable. Fully tested and designed by practical Aviators. Our—

## ACCESSORIES

are the best it is possible to obtain.

**A.V. ROE & Co.,** The Aviators' Storehouse,  
Brownsfield Mills,  
MANCHESTER.

## RELIABILITY.

# BLACKBURN

## MONOPLANES & PROPELLERS

For Durability, Stability, and Efficiency.  
**TUITION.**

Write for prices and particulars to—

**The BLACKBURN AEROPLANE Co.,**

Phone:  
2322 Central.

Telegrams:  
"Propellers, Leeds"

## TUITION

# £75

## INCLUSIVE

. . . THE . . .

## "Flanders" Monoplane

60-80 H.P. Green Engine (Circuit of Britain Type).

One two, or three seaters. Pupils taught on monoplane  
— with double control. £10 returned in event of no damage.

**L. HOWARD-FLANDERS & CO., BROOKLANDS, WEYBRIDGE**

















SMITHSONIAN INSTITUTION LIBRARIES



3 9088 00710 7592